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OVERSIGHT OF EPA AND THE GREAT LAKES WATER QUALITY AGREEMENT

HEARINGS

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

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OVERSIGHT OF EPA AND THE GREAT LAKES WATER QUALITY AGREEMENT

FRIDAY, APRIL 28, 1989

U.S. SENATE,
SUBCOMMITTEE ON OVERSIGHT
OF GOVERNMENT MANAGEMENT,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Grand Rapids, MI.

The Subcommittee met, pursuant to notice, at 10:09 a.m., in the City Commission Headquarters, 300 Monroe Street, Grand Rapids, MI, Hon. Carl Levin (chairman of the Subcommittee) presiding.

Present: Senator Levin.

Staff Present: Elise J. Bean, Counsel; Frankie de Vergie, Chief Clerk; Pamela Lokken, Professional Staff Member; Rick Tormala, Director, Grand Rapids District Office of Senator Levin; Paul Troost, Staff Assistant, Grand Rapids District Office of Senator Levin; John DeKuipper, Staff Assistant, and Paul Kellstedt, Intern.

OPENING STATEMENT OF SENATOR LEVIN

Senator LEVIN. Good morning, everybody.

This is a hearing of the Subcommittee on Oversight of Government Management, which is a Subcommittee of the Governmental Affairs Committee of the Senate. I am Chairman of the Subcommittee, and this is what is called a "field hearing," where we come to a State outside of the District of Columbia to put a special focus on an issue which we are interested in as an oversight subcommittee.

As residents of Michigan, we have been raised with a deep respect for the beauty and the importance of the Great Lakes. The Great Lakes are a unique natural resource. They contain almost 20 percent of the world's fresh water, they provide drinking water to millions of Americans, and they support a tourist trade that is worth billions to our State.

They are a major reason why people choose Michigan as a place to live and visit.

Unfortunately, the Great Lakes are not safe from our abuses. They are bombarded daily with pollution from every direction. There are some areas where the fish float belly up, and the garbage is a constant eyesore, and there are places where toxins that we cannot see or taste or smell poison the waters, causing tumors in fish, birth defects in birds, and chemicals like PCB's in mothers' milk and human tissue.

We cannot let that continue, for ourselves or for our children. The United States made a promise to work to get rid of the pollution in the Great Lakes. We are here today because of that promise and because we want to determine whether the Environmental Protection Agency is living up to the commitment which our Government made. There is a lot at stake for all of us.

We are going to spend this morning talking about strategic plans and remedial action plans that are aimed at protecting and restoring the health of the Great Lakes. At times, it may sound like a lot of paperwork and tortuous bureaucracy. But what this hearing is really all about is forcing effective action to stop dangerous pollution that threatens our precious lakes.

The Federal Government has played and can play a major role in halting the pollution of America's lakes and rivers. In the case of the Great Lakes, during the 1970's, when some of the waters were choking from phosphorous discharges, and the bad odors and dying fish raised the specter that the Lakes themselves might be dying, the United States and Canada signed the Great Lakes Water Quality Agreement of 1978. This landmark international Agreement gave us a blueprint for restoring the health of the Great Lakes.

It was in response to this Agreement that vigorous phosphorous control programs were launched in both countries. Major construction of wastewater treatment plants and comprehensive controls on discharges into the lakes were undertaken. Phosphorous pollution declined by 80 percent, and threatened areas began to revive. That success story shows what can be done when the Federal Government gets serious about addressing a pollution crisis.

What we need is for the seriousness of that effort to continue not only on phosphorous but also on the toxic poisons that threaten the future of the lakes. In 1987 when the United States and Canada reexamined the Great Lakes Water Quality Agreement, they recognized the need to expand it to deal with the toxic threats. Both countries formally agreed, for example, to develop a Lakewide Management Plan for each of the Great Lakes to control the worst pollutants. They also agreed to develop Remedial Action Plans to clean up 42 toxic "hotspots" which have the worst pollution problems. They reaffirmed a pledge to virtually eliminate the discharge of persistent toxins into the Great Lakes. They added provisions on such problems as contaminated sediments, contaminated groundwater, and air toxics.

These are key promises to address the toxic threats, and the provisions describing them in the Great Lakes Water Quality Agreement are well-drafted and far-sighted. The question is: Are they being implemented? That is the question which has been the focus of the Subcommittee's inquiry these past months. The results of that inquiry are disturbing.

In instance after instance, on major programs and initiatives, I am afraid that EPA has appeared to have dropped the ball. Crucial plans have been postponed. Solemn promises have been ignored. Key programs on toxic threats have been left adrift or mishandled.

For example, in 1987, the United States agreed for the first time to develop a Lakewide Management Plan for each of the Great Lakes. The point of these plans is to attack the worst pollutants in each lake in a comprehensive and integrated way by identifying and dealing with their sources and pathways within each lake.

EPA decided to develop this plan for Lake Michigan first since that lake is wholly within our borders and already has a lakewide planning document. It has not produced a single draft of the Lake Michigan Plan. In fact, I do not believe it has even held a public meeting to determine the plan's goals and content.

Only now, 18 months after that commitment was made, is the EPA beginning to grapple with how to develop the plan. And its poor record of implementing the earlier Lake Michigan plan raises troubling questions about whether EPA will aggressively implement the comprehensive approach required in the Agreement between ourselves and Canada.

A second key initiative in that Agreement involves the preparation of Remedial Action Plans, now usually called "RAP's," to clean up the Great Lakes' 42 toxic hotspots. Preparation of these RAP's are the focus for most cleanup efforts going on in the Great Lakes today. The United States, which committed itself to ensuring their development and implementation, has directed the EPA to oversee the States' RAP activities. But the EPA's oversight record is a disheartening one.

The first milestone in the RAP process is to submit a draft RAP to the International Joint Commission for review. This Commission is jointly sponsored by the United States and Canada to protect the Great Lakes. It is only after the International Joint Commission's review that a Remedial Action Plan, or RAP, is finalized and actual cleanup begins.

The problem here is that, despite years of work, most RAP's have not reached even this first milestone. Only 10 of the 30 RAP's for toxic hotspots in the United States have been submitted to the Commission for review. On Lake Michigan, 6 of 10 required RAP's have not even reached the first milestone, and for some of the six, we are told only the barest outline of a RAP exists.

When these RAP's are finally adopted and the cleanups begin, the EPA must be ready to ensure their implementation. That means Federal dollars must be available to help communities pay for the cleanup costs. Yet it is not clear that EPA is prepared to provide the needed financial assistance.

A third major initiative in the Great Lakes Water Quality Agreement is the commitment made by the United States and Canada to test new technologies to clean up contaminated sediments in the Great Lakes. Contaminated sediments affect 41 of the 42 toxic hotspots and present the most difficult cleanup problems due to the huge volumes of sediments involved and the need to minimize disturbing the contaminated particles. A key impediment is a lack of experience with cleanup technologies.

That is why the Great Lakes Water Quality Agreement contains a specific requirement to sponsor technology demonstrations. That is also why Congress passed a law in 1987 requiring EPA to conduct a 5-year program to test sediment cleanup technologies in the Great Lakes. That law names five priority sites for demonstration projects including Saginaw Bay, Michigan. Yet in the 2 years since it has been enacted, the EPA has yet to conduct even the first demonstration of a sediment cleanup.

Worse is EPA's record in achieving one of the most important goals of the Great Lakes Water Quality Agreement—adopting regionwide water quality standards in conformance with that Agreement. Historically, water quality standards have varied considerably among the Great Lakes States. The same is true today. The EPA has to date been ineffectual in achieving the uniformity envisioned by that Agreement.

To illustrate this problem, the hearing will look at two modest goals which the EPA and the four Lake Michigan States established in the earlier lakewide plan for Lake Michigan. EPA and the four States agreed to adopt uniform rules requiring: one, numerical limits for the discharge of certain pollutants into the Lakes; and two, anti-degradation provisions, preventing dischargers from increasing the discharge of pollutants into the Lake.

Today, almost 3 years later, neither the numerical limits nor the anti-degradation provisions are in place in all four Lake Michigan States, and there is no evidence that these goals are going to be achieved any time soon.

We found other examples of EPA's failures as well, including a year-long delay in implementing a commitment to help Michigan develop a model stormwater permit program for the Rouge River; delays in getting the Kalamazoo River added to the Superfund National Priority List, and cutbacks in the operation of a Great Lakes air toxic monitoring network which is required by the Agreement.

Relative to the Kalamazoo River Superfund issue, by the way, Mr. Adamkus, who is with us today, is entitled to our gratitude for nominating the Kalamazoo River to Superfund's National Priorities List. If this List is approved, the Kalamazoo River would become eligible for Federal cleanup dollars. It has been a 3-year effort, and we are appreciative to Region V for putting the Kalamazoo River on its recommended Superfund list. The problem is that the List is still not approved. It is sitting on a Deputy Assistant Administrator's desk in Washington.

We called yesterday. We want you all to know that we called the EPA in Washington, urging the Deputy Assistant Administrator to approve that list. He said he had not yet gotten to it. We told him that we were having this hearing this morning in Grand Rapids. He said he was aware of that fact. We told him that we would be delighted if this morning Mr. Adamkus could tell us that a piece of paper has been signed on a desk in Washington which is the final step in getting that list published, so that the Kalamazoo River is formally nominated as a Superfund site. We are hopeful that we will get that good news yet this morning.

The oilspill in Alaska shows all too clearly just how fragile our water resources are, and how easily humanity can disfigure those resources for generations to come. The Great Lakes Water Quality Agreement has given us an excellent framework for restoring and protecting the Great Lakes. What we need now is action.

The witnesses here today are deeply involved with Great Lakes concerns. EPA is represented by top administrators from the Region and from the offices which oversee all of the Great Lakes and its neighbors. Governor Blanchard is represented by the Deputy Director of the Michigan Department of Natural Resources, and the Director of Michigan's Great Lakes Office, and a number of leading environmentalists will also be testifying later on this morning.

Of course, there are many individuals and groups besides those testifying here today, or who are present today, who have contributed to the effort to restore the Great Lakes. I wish we could hear from everybody who would have liked to have testified; we cannot. But the commitment of all these groups and individuals to the Great Lakes is critical to our State and Nation, and we are grateful for that commitment.

Our first panel is made up of two witnesses—Val Adamkus and Carol Finch, both from the Environmental Protection Agency. We would like to welcome them.

Mr. Adamkus wears two hats. He is the Regional Administrator for the EPA's Region V, as well as EPA's National Program Manager for the Great Lakes Program. Ms. Finch is the Director of the Great Lakes National Program Office.

Mr. Adamkus and Ms. Finch, we are grateful that you are with us this morning. Please come forward. We have your written testimony, Mr. Adamkus, and we are pleased that you submitted that testimony to us.

TESTIMONY OF VALDAS V. ADAMKUS, ADMINISTRATOR, REGION V, U.S. ENVIRONMENTAL PROTECTION AGENCY,[1] ACCOMPANIED BY CAROL FINCH, DIRECTOR, GREAT LAKES NATIONAL PROGRAM OFFICE, CHARLES SUTFIN, DIRECTOR, WATER QUALITY DIVISION, EPA REGION V, AND PAUL HORVATIN, ACTING CHIEF, REMEDIAL PROGRAMS, GREAT LAKES NATIONAL PROGRAM OFFICE

Mr. Adamkus. Good morning, and thank you very much for providing us this opportunity to appear before you.

With your permission, I would like to ask if Mr. Sutfin and Mr. Horvatin could join us at the table, because I believe there is really great interest on everybody's part, and they are the experts in that field, so will provide us with additional information.

Senator Levin. Please do. Could they give us their names and their titles?

Mr. Sutfin. I am Charles Sutfin. I am Director of the U.S. EPA Region V Water Division in Chicago.

Mr. Horvatin. My name is Paul Horvatin. I am the Acting Chief of the Remedial Program Staff in the Great Lakes National Program Office.

Senator Levin. Thank you.

Mr. Adamkus. Mr. Chairman, I will address this Subcommittee's stated concerns as expressed in your letter to Administrator Reilly, and the topic today will be the Great Lakes water quality, its trends and problems.

There have been two general types of problems in the Great Lakes water. The first problem involves nutrients that cause excessive growth of algae, oxygen depletion and taste and odor problems. These conditions reached their worst in the late sixties and early seventies. The second problem is the presence of persistent toxic substances in our ecosystem.

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[1] See p. 141 for Mr. Adamkus' prepared statement.

The U.S. EPA and the States have made substantial progress on both fronts over the past two decades. Nutrient loadings from regulated sources have declined by over 80 percent in large part owing to the phosphorous control requirements. All Great Lakes States except Pennsylvania have regulations that limit phosphorous in common household detergents, an important phosphorous source.

Today phosphorous remains a problem in the Saginaw and Green Bays and in Lakes Erie and Ontario. Nevertheless, the trend in phosphorous levels in these waters is downward.

We have sponsored a demonstration program to increase the use of conservation tillage practices by farmers in order to reduce agricultural phosphorous runoffs to the lakes. We continue to monitor water quality to determine if States will need to revise their agricultural nonpoint pollution control programs to meet the United States' commitments.

Important environmental progress has also been made in reducing persistent toxic substances. Legislation restricting or banning the use of PCB's and certain pesticides such as dieldrin, DDT and others led to dramatic declines in the mid- to late-seventies in concentrations of these substances in fish tissue.

However, the trend data during the 1980's shows a general leveling off of the rate of decline in concentrations of these contaminants at levels that continue to pose a threat to aquatic species and to human health through fish consumption.

We believe that there may be hundreds of other chemicals to be found in fish tissue and, by direct implication, in the lakes. Under the Great Lakes Water Quality Agreement, the United States and Canada are jointly committed to systematic review of information on these chemicals, to assess their potential hazards to ecosystem health, to learn their input routes to the lakes, and to take appropriate control measures. This is a complex and ongoing undertaking drawing on a broad range of U.S. EPA, other Federal, and State programs.

As my next topic, I would like to address U.S. EPA progress in implementing the Great Lakes Water Quality Agreement. The Great Lakes Water Quality Agreement is a comprehensive commitment to protect the Great Lakes ecosystem. As the two nations have learned more about persistent toxic substances in the ecosystem, they have renegotiated the Agreement and strengthened their environmental programs to address this challenge.

The Agreement has many aspects. I will focus on the two major remedial approaches formally added when the Agreement was most recently negotiated in November 1987. These two approaches are: Remedial Action Plans for local areas of concern, what we call sometimes "toxic hotspots"; and Lakewide Management Plans for critical pollutants on a whole lake basis.

The development of these plans represent a challenging departure from the earlier U.S. pollution control efforts. Previously, separate programs for water, air, and waste were essentially implemented independently. The process set forth in the Agreement is to call upon a wide range of Government agencies and programs to work together to both clean up the Great Lakes and to prevent future pollution.

There are 25 Areas of Concern within the United States, and the United States and Canada share five others. There are grounds to believe that these local areas are themselves important sources of toxic pollution to open lake waters.

Under the Agreement and consonant with the delegated Federal responsibilities under the Clean Water Act, development of Remedial Action Plans is a State activity.

The first seven RAP's were submitted to the International Joint Commission in 1987, and three more in 1989. Six of these remain under review; Wisconsin has added the one relating to Green Bay to its water quality management plan. States have indicated that they will submit seven new RAP's to the International Joint Commission this year and nine more next year. As they are developed, RAP's will be incorporated into State water quality management plans. This will further serve to focus State and Federal resources on RAP's.

U.S. EPA is supporting States in their development of RAP's in multiple ways. One important way is through program grants to State environmental agencies. Additional grant and contract support for RAP development has been provided through the Great Lakes National Program Office. This Office has also led studies in environmental conditions in various Areas of Concern, including a study of the Upper Connecting Channels which was just completed and released that encompasses three Michigan Areas of Concern and a current major study of Green Bay. An additional major study of contaminated sediment problems in the Great Lakes will develop further information on environmental conditions and remedies that will be available to States for development of RAP's.

I will also speak to progress on development of Lakewide Management Plans. U.S. EPA and States have developed toxics strategies for Lakes Ontario and Michigan that set out a multiyear agenda for addressing toxicants on a whole-lake basis. There are a wide range of supportive activities to these tragedies, including application of regulatory tools, assessment of pollutant loadings, and pollutant modeling. The strategies for both lakes are consistent with the goals of the Agreement. I would like to focus today on the Lake Michigan strategy.

The Lake Michigan strategy was developed in 1986. It is a joint effort by U.S. EPA and the States of Illinois, Indiana, Michigan, and Wisconsin to define Lake Michigan toxicant problems so as to develop additional remedies as necessary. There are many elements to this strategy. I will limit my remarks to general points.

One focus over the last several years by U.S. EPA and States has been revision as necessary of State water quality standards and procedures to ensure comprehensive numeric water quality standards, procedures to derive numeric effluent limits, and anti-degradation procedures.

States have been imposing tighter restrictions on toxicant dischargers. In addition, U.S. EPA and States met yesterday and agreed to develop model water quality standards to protect the Great Lakes Basin. We received unanimous support from the States for this proposal.

Based on these responses, U.S. EPA will determine how best to proceed.

A second major U.S. activity in supporting of the Lake Michigan strategy has been review of discharge permits for priority toxic pollutants. During fiscal year 1988, States reissued 42 major and 157 other municipal or industrial permits for the Lake Michigan Basin. Acute toxicity is addreseed in almost 100 percent of permits. Controls on metals are routine. Biomonitoring has taken place at 70 percent of major dischargers, consistent with a 5-year plan begun in 1984. During 1988, U.S. EPA tested seven facilities in the Lake Michigan Basin using biomonitoring techniques, and discharges from two have been identified as toxic, and their permits will be modified.

Another major U.S. EPA initiative is working on a study of the sources, paths and fates of selected toxic substances in Green Bay. This study led by the Great Lakes National Program Office, the Office of Research and Development, the State of Wisconsin, and the National Oceanic and Atmospheric Administration is critical to determining the feasibility of studying toxicant problems on a whole-lake basis and to increasing our knowledge of the extent and relative importance of different sources of toxicants.

We need to learn more about the contributions of air pollution, of rural and urban land runoff, of contaminated groundwater and of contaminated sediments so as to help choose the most effective remedial measures under the Lake Michigan strategy.

The Great Lakes National Program Office has also purchased a new research vessel that will be outfitted with analytical equipment to permit open lake water and sediment sampling for toxics. The Office is also upgrading its existing air deposition network to measure toxic pollutants. Both the new vessel and the enhanced air deposition network will be important to understanding Lake Michigan's water quality and the nature of threats to it.

And last I will address the important topic of U.S. EPA progress in relation to contaminated sediments in the Great Lakes.

All 30 U.S. areas of concern contain contaminated sediments. Evaluating the contribution of these sediments to water quality problems and devising appropriate remedial measures is one of the most difficult aspects to RAP development.

In general, the scientific community has not yet studied sediment contamination sufficiently to understand the extent of transport of pollutants from sediment, the water column and ecosystem, or to recommend responses.

One major U.S. EPA initiative to address this need is a study by the Great Lakes National Program Office that will include demonstration projects of promising technologies as well as assessments of contaminated sediment problems in the Great Lakes Basin. Priority will be given to locating demonstrations in areas specified by statute. The design of this study is well under way with technical work groups, including scientists from various agencies. Field sampling of sediments will begin this summer and will address all five priority locations—Ashtabula River in Ohio; Buffalo River in New York; Grand Calumet River in Indiana; Saginaw Bay in Michigan; and Sheboygan Harbor in Wisconsin.

Benchscale laboratory demonstrations of treatment technologies on sediment samples from these areas will begin later this calendar year. During fiscal year 1990, we will plan field demonstrations based on matching site characteristics, promising technologies and remedial options, and the location of complementary activities by the Army Corps of Engineers. Selected projects for each of the five priority locations will be coordinated with local, State, and other complementary Federal programs, including Superfund, to make the fullest use of available resources.

In addition, U.S. EPA is undertaking a national effort to develop criteria for contaminant concentrations in sediments. Without such criteria, there is no absolute, scientifically derived goals for remedial measures. As a lead U.S. EPA Region for water programs, Region V is closely involved with this national effort, including technical committee inventory.

That is basically what we are trying to do. Unfortunately, Mr. Chairman, I do not have any paper with me as you indicated from the Superfund as far as the Kalamazoo River is concerned. Nobody communicated, and I would really be the happiest man here in this room to be able to produce this kind of paper to you here.

Senator LEVIN. We don't need the paper here today. We just need a phone call from the Deputy Assistant Administrator.

Mr. ADAMKUS. I would be happy with that, too.

Senator LEVIN. Well, perhaps when you are done, you can give him a phone call, because the key paper is just sitting there on his desk. My staff talked to him yesterday, and he said he hasn't had a chance to get to it. So perhaps a prodding call from you can produce that result today.

Mr. ADAMKUS. I definitely will do that, Senator.

Senator LEVIN. Thank you. Does that conclude your statement?

Mr. ADAMKUS. Yes. Thank you very much, and we are ready to respond to whatever questions you have. The staff is here with me and of course, Carol Finch, who is the Director of the Office, is willing to provide you additional information.

Senator LEVIN. Mr. Adamkus, thank you again for being here this morning with your staff and for your statement.

To me, the 1987 requirement that the United States and Canada develop a Lakewide Management Plan for each of the Great Lakes is one of the best additions to the Great Lakes Water Quality Agreement. When we write these plans, we are going to have to address a whole host of problems that affect the Lakes, and we are going to have to do it in a comprehensive and integrated way. So it is very important, I think you would agree, that we press ahead with the Lakewide Management Plan.

Now, the Agreement between ourselves and Canada indicates that the United States should build upon an earlier document, the Lake Michigan Strategy, when we are producing the Lake Michigan Lakewide Management Plan. My question is: Has the EPA begun writing a draft of this plan yet?

Mr. ADAMKUS. Sir, I believe we did more than that. There are certain steps already undertaken, and Chuck Sutfin, would you like to lay it out?

Senator LEVIN. The specific question is: Have you begun writing your draft plan?

Mr. SUTFIN. First of all, let me explain that the Lake Michigan toxic strategy was prepared in 1986, which was before the Agreement was amended, and it served as the impetus for the idea of a Lakewide Management Plan. So that is the reason we are contemplating starting on Lake Michigan to develop a Lakewide Management Plan.

The activities that have taken place so far have been involving all eight of the Great Lakes States plus U.S. EPA and Canada to try to formulate the basic outline of a Lakewide Management Plan, what it will contain, the approaches we will take in developing the plan for involving the public in the development and so forth.

As a matter of fact, this week there was an international meeting with Canada and selected participants from the regulatory agencies, the environmental community and others to conduct a workshop to discuss how these Lakewide Management Plans would be developed and to try to address some of the policies and questions that still remain. I was not able to attend that workshop, but I am told it was very successful and will go a long way toward laying the groundwork for implementing the actual development of the Lake Michigan Plan. That plan is, I believe, scheduled for completion tentatively in July of next year.

Carol, I don't know if you want to add anything to that.

Ms. FINCH. Yes. I would just like to add that I did attend the workshop and thought it was highly successful and a very good beginning. We will be using the lessons that we have learned from Lake Michigan, Lake Ontario, the lessons that are going to come out of the Green Bay Mass Balance Study, the Remedial Action Plans, the Upper Great Lakes Connecting Channels, the Niagara River Toxics Study to build in the actual development of Lakewide Management Plans. They will take two levels of effort. One will be to address the chemical-specific, and then a second phase to address the more difficult—the ecosystem approach to Lakewide Management Plans.

This process of developing lake wide management plans is not something that can be done quickly overnight, and there is no deadline within the agreement, no specified time frame for doing this. I think those of us who were involved in renegotiation of the agreement realized that this was new territory, and it was going to take a lot of effort on the part of a lot of different people. The workshop that we held yesterday and the day before is a beginning effort to pulling together the varied components of people who need to be involved in developing these, because it is going to take a real rigorous public commitment to really carry them off.

Senator LEVIN. Why did it take a year and a half to get to a workshop to talk about developing meetings to develop a draft to develop a plan to lead to action? It seems like an awfully slow path to me. Why a year and a half to get to the workshop point? We don't have a draft of a plan; we have not had a public meeting. Why so long?

Ms. FINCH. Primarily because preliminary work was needed within the agency, both in discussions and in pulling together the needed information base. The Agreement and the Clean Water Act setting up the Great Lakes National Program Office came at about the same time. Both are ambitious efforts. We have had a considerable work effort to cement relationships, build constituencies, and pull people in from a variety of areas in order to ensure that we have the base for this work.

Senator LEVIN. I take it that that was not even a workshop on the Lake Michigan Plan; that was just a workshop on plans in general, is that right?

Ms. FINCH. That is true.

Senator LEVIN. Now, as I understand from your letter in answer to one of our pre-hearing questions, you indicated that, "Region V has proposed a tentative target be set to complete a draft" of a plan for Lake Michigan by the middle of 1990. Is that correct?

Ms. FINCH. Yes, it is.

Senator LEVIN. Whom did you propose that tentative target to?

Ms. FINCH. Chuck, would you like to speak to that?

Senator LEVIN. Is this to yourselves, in essence?

Mr. SUTFIN. It is a work plan target that we have set internally within EPA in consultation with the States for completing the first draft of the Lake Michigan Plan. Part of the activity that has been taking place since the Agreement was signed was a series of meetings with the States. We have organized this around a State EPA work group that has been meeting on a regular basis, and that group is the one that decided to start on the Lake Michigan Plan and to set that as a target date.

Senator LEVIN. My question, though, is about that language in your answer to us. It seems too tentative and cautious to me when you say that Region V has "proposed" a "tentative target." First of all, I don't think you should "propose" it; I think you should adopt it. Is that fair, that Region V would adopt a target? You don't propose it to yourself. You just use the word "adopt"—so is that not correct, that you "adopt" targets, you do not "propose" targets?

Mr. ADAMKUS. Yes, sir.

Senator LEVIN. Otherwise, you would be proposing to yourselves.

Mr. ADAMKUS. Yes, we adopted this; it is becoming a part of our work plan.

Senator LEVIN. All right. So you have adopted something.

Mr. ADAMKUS. Correct.

Senator LEVIN. OK. Number two, why does a "target" have to be "tentative"? I mean, it is tentative enough without being labeled a "tentative target". Do you see how cautious your language sounds, when you say you have "proposed" a "tentative target"? You have got so much caution and delay in there that it is frankly overloaded with words of non-action.

Can't we say that you have adopted a target for July of 1990? Is that accurate now, that you have adopted a target; it is not a tentative target, it is a target, and you have not proposed it, you have adopted it—is that OK?

Mr. SUTFIN. Certainly.

Senator LEVIN. OK. Now, would it also be fair to say that you have some kind of a commitment to yourself to distribute a draft of that plan to the public a few months before July 1990? I am trying, as you can see, to get some milestones in here.

As you pointed out, I believe, Mr. Adamkus, or Ms. Finch may have done it, there is no deadline in this Agreement between ourselves and Canada; there are no milestones. And one of the things that I am looking at in terms of amendments to our laws is whether we ought to be building in some milestones for the EPA. So that is what I am trying to get from you today.

We have now got a July target for the draft plan, and I want to build in a milestone before that for public dissemination of the draft.

Could you tell us that you will adopt a target for public dissemination of the draft by May 1, 1990? Is that fair?

Mr. SUTFIN. Well the process we will go through is to develop—we have got the target end date for having a draft—is to develop a work plan for developing the Lakewide Management Plan. That work plan will include a series of interim steps. That work plan has not yet been developed. We are really awaiting the results of this workshop and the general policies for how we are developing Lakewide Management Plans.

Then we will write the Lake Michigan work plan and proceed from there. But the process will be a wide open process involving the public in the actual preparation of the plan itself.

Senator LEVIN. Is that draft that you made reference to—that you now have a target for July of 1990—a draft for internal use, or is that going to be a draft for public use?

Mr. SUTFIN. It will be available to the public, but I would guess that we will have information available to the public far sooner than that as well.

Senator LEVIN. So that this work plan that you are talking about is going to lead to this draft being disseminated no later than July 1 of 1990. That is your target?

Mr. SUTFIN. Right.

Senator LEVIN. My question is: Will there be prior to July 1, 1990, the dissemination of that draft for public comment?

Mr. SUTFIN. Yes. There will be interim products that will lead up to that that will be available to the public as well.

Senator LEVIN. All right. So that July 1 is the end of your process where you will then say, this, after public input, is the draft plan of the EPA for Lake Michigan; is that correct?

Mr. SUTFIN. That is correct.

Senator LEVIN. OK.

Mr. ADAMKUS. Senator, I would like to reassure you that during this entire period of time, this is going to be a really open process involving all the environmental groups and all the civic groups who are interested in the development of that plan, and we are going to involve them from the very beginning.

Senator LEVIN. OK, thank you. Now to change to the Remedial Action Plans. As you have indicated, Mr. Adamkus, for each of the hotspots, the 42 hotspots, 30 in the United States, a Remedial Action Plan or a RAP is supposed to be written which gives a description of the site, the cleanup techniques to be tried, a timetable for action, and who is responsible for implementation.

The Great Lakes Water Quality Agreement requires the United States and Canada to ensure the development and implementation of those Remedial Action Plans. Those are the words of the agreement between ourselves and Canada.

Now, Lake Michigan has 10 areas of concern, and I want to focus on those 10 areas on Lake Michigan as examples of the RAP cleanup effort.

There are a couple of charts [1] over there, and I believe you have been furnished copies as well. One shows where the areas are, and one shows how the RAP deadlines are frequently missed.

The deadlines in these charts, by the way, are not for finishing the Remedial Action Plans; they are just for reaching the first milestone, which is to submit those plans to the International Joint Commission for their review.

The charts show that only 4 of the 10 RAP's for the hotspots in Lake Michigan have gone to that first milestone. And by the way, the State of Michigan happens to be ahead of other States in this area, because I believe three of four areas that are actually in the State of Michigan have RAP's which have already reached the first milestone. So we at least are batting 750 inside the State of Michigan in getting our plans to the International Joint Commission. But I am afraid the batting average, generally, is quite a bit lower than that.

Now, if we could turn to the first one on that chart, the one for the Grand Calumet River and Indiana Harbor Canal. This RAP has been under development since 1984, and it has missed two deadlines. First there was a submission date projected for June 1985, as you can see on that chart, and then in 1987 a new submission date was adopted for January 1988. Both of those dates have been missed. The new deadline for that RAP is August of 1989.

The question is: What is the EPA going to do to make sure that that August deadline is met?

Mr. ADAMKUS. Before I answer that, Senator, let me say that I am extremely disturbed about the entire RAP process. I was one of the originators of the entire areas of concern and the RAP concept as such to the Water Quality Board when we proposed that to the International Joint Commission. I was anticipating at that time that we were going to move really rapidly to solve those issues, because that is the answer to the toxic problems, and I would say the major answer to all the toxic problems in the Great Lakes.

Unfortunately, I was wrong, and I am disappointed—not because the U.S. EPA is not doing anything, but I believe that the combined efforts—and as you heard before, that is a prime responsibility of the States; the States are developing those RAP's.

The Water Quality Board has received a first submission, and I compliment the State of Michigan; they were the first ones to provide the majority of the plans. But after the review, unfortunately, we were unsatisfied with the proposed plans, and we felt that they did not actually respond to all the needs to clean up those sites properly. So they were returned back for review. And I believe this is probably the indication, the trend, the way you are going. This is why we are not getting those plans in time. We are missing the deadlines because we are probably trying to be more perfect than we should. But that is the basic issue which we have to deal with.

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[1] See p. 305.

We will try to do everything we can to help the States to develop those plans, but with all due respect I have to say that the prime responsibility is with the State governments and State organizations to provide us those drafts so that we can review and submit those drafts further for the approval of the International Joint Commission.

Senator LEVIN. As I understand it, the Federal Government has taken on the obligation of ensuring the development of those RAP's. Is that correct?

Mr. ADAMKUS. Yes, in principle, yes, but the responsibility to develop still rests with the States.

Senator LEVIN. But it is EPA's responsibility to ensure the development under our Agreement with the Canadians.

Mr. ADAMKUS. I don't believe that such exact language exists.

Senator LEVIN. Well, I think it does—paragraph (n) says the United States will undertake "measures to ensure the development and implement of Remedial Action Plans." That is right in the Agreement, Annex II.

Mr. ADAMKUS. I stand corrected, then.

Senator LEVIN. What happens if a State misses a RAP deadline? What actions do you take?

Mr. ADAMKUS. We just encourage them to try again.

Senator LEVIN. What sanctions do you have? What pressures——

Mr. ADAMKUS. None whatsoever.

Senator LEVIN. Do you have any permit powers over States?

Mr. ADAMKUS. In what respect?

Senator LEVIN. Can you approve or not approve permits?

Mr. SUTFIN. Our main authority is through our annual work planning process. Every year with each of the States we develop a work plan that supports the grants that we make to the States to operate a general water quality program.

Senator LEVIN. So you have the grant power, and you have the permit power to enforce RAP deadlines.

Mr. SUTFIN. We don't really have any permit power to enforce RAP deadlines——

Senator LEVIN. Don't you approve permits for dischargers in those areas?

Mr. SUTFIN. Yes, we do. But those permits—it is a separate process that doesn't really relate to RAP planning.

Senator LEVIN. So there is no discharge in those RAP areas that are permitted by EPA?

Mr. SUTFIN. There are discharges, and we do have to approve permits within those RAP areas for those discharges, but our approval has to be consistent with Federal regulations, guidelines and policies, or approved Water Quality Management Plans, which is equivalent to a RAP, but until the plan is approved, we cannot use it to sanction the States.

Senator LEVIN. Could you withhold the approval of the annual work plans? Is that a possible sanction when a RAP deadline is missed?

Mr. SUTFIN. Well——

Senator LEVIN. Can you withhold funds from States?

Mr. SUTFIN. Our main way of communicating our interest to the States is through evaluation of State programs.

Senator **Levin**. I understand that, but do you have the power to withhold your approval of annual work plans as a way of enforcing a RAP deadline? That is my very specific question.

Mr. **Adamkus**. No, not the RAP deadline enforcement.

Senator **Levin**. Could you do that?

Mr. **Adamkus**. Well, unlikely, because let's face it, Senator—the States are so short on money to implement and conduct the basic programs. So if we would be so radical, coming out with this kind of approach, I believe you will be the first one in the delegation coming and asking what are you doing.

Senator **Levin**. I think that is probably true. But remember, these are plans we are talking about. This is not even the cleanup. And that is what troubles me so much—this should be the easy hurdle. The tough thing is getting money for the cleanup. If we want to see how difficult things are, wait until we get to that point. This should be easy—relatively easy. This is the plan for the cleanup. This isn't the cleanup money. This is just the piece of paper which says how we are going to go about the cleanup. Now, I would think that that ought to be fairly easily achievable after all these years in these areas.

But my point isn't what the reaction of the States would be to EPA pressure or what the reaction of the Congress would be when States come to us and ask, "Holy cow, what is EPA doing to us?" Obviously, that goes on all the time, that kind of pressure back and forth and tension back and forth comes all the time. It is part of the democratic process. It is part of checks and balances. It is part of representative government.

The point is you folks are responsible for implementing these RAP's, even though that may put pressure on our own States. It may end up putting pressure on us, because our State Governments will come to us and say, "My gosh, the EPA is threatening to withhold approval of our work plan," or "They are threatening to withhold our money for the year unless we get this RAP in. Can't you do something?" And the answer is yes, we will call you up and ask you for some more time, probably.

That is not the point. The point is it is your responsibility to keep that pressure on. The States, it seems to me, are going to respond a lot faster if EPA is saying, "Look, meet your third deadline. We are not going to give you anymore extensions on this, and we want you to meet it."

So when you say you don't have any power and kind of throw up your hands and say you simply work with the States, you encourage the States' delays—you have got tremendous clout if you want to use it. You have got clout over work plan approval, and you have got clout over money. That is the real clout. You say you don't have permit approval clout, and I will accept that, but you have got plenty of clout in the area of work plan approval and dollars that you send to the States.

My question is, since we are obligated by our Agreement with Canada to get these Remedial Action Plans approved—and again, I emphasize these are just the plans—why not use some of your clout to get them approved? That is my question.

Mr. **Adamkus**. Senator, I hear you; I am getting the message to get tough, and I will probably take that advice. But I want to just go back to where you said this is just the preparation of a piece of paper. This is probably, I believe, where we have a problem. We received those papers, but we did not accept them because we did not believe that they were appropriately done—that is the first thing—and secondly, the preparation of those papers still has to deal with the realities—if the State is capable of making the commitments and commit others to actual implement them—this is basically where the problem is.

Senator LEVIN. When I say it is just a piece of paper, I said it is a plan.

Mr. ADAMKUS. I understand that.

Senator LEVIN. A plan is important. It won't do anything in and of itself, but you will never get the work done without that first step. My emphasis is that this is just the plan to do the work. And unless there is a willingness on the part of EPA to put some pressure on States to get those plans in, we are never going to get to the big step. The giant step is getting the darned action completed.

So I am not saying be unreasonable. It just seems to me you've got to be strong, and you have got to be tough. And I am talking about with our own States. And I understand the pressures folks like me will be under. I know this pressure will end up on me or on my colleagues. We will get calls from our State Governments saying, "My gosh, EPA is telling us they are going to do this, that and the other thing unless we get our RAP done. What are you going to do about it?"

I or my colleagues may end up calling you and saying, "Can you slow up?" I understand this process. The point is that without the pressure you won't get these RAP's done. It will be done a lot faster with EPA pressure than without EPA pressure. That is all I am saying. And you have got plenty of sanctions.

Mr. SUTFIN. Senator, if I could say something. First of all, we have used the power that we have to get the States to begin preparation of the RAP's in the first place, and we have on an annual basis in our work planning process applied that pressure on the States.

I would suggest you ask Mr. Rector, who will follow us, whether or not we have done so. I think he will say we have.

Senator LEVIN. Well, I just asked Mr. Adamkus, though, and both of you said you don't have any sanction power.

Mr. SUTFIN. No, I did not say that.

Senator LEVIN. Well, you haven't used any threat of sanction.

Mr. SUTFIN. No, not true.

Senator LEVIN. Oh. I thought you indicated you had not.

Mr. SUTFIN. We have used the work planning process to put pressure on the States to develop these RAP's, and we have evaluated their performance under the work plans on an annual basis and provided comments back to the States, urging them to keep going and complete the plans. I think the States will confirm that.

Senator LEVIN. The record here, if you take a look at that chart, is of deadlines that are set and deadlines that are missed. On the first one, the Indiana one, the first deadline was 1985.

Mr. SUTFIN. In the case of the Indiana RAP, that also was the first place we, EPA, provided assistance in trying to develop a RAP. That predated the Water Quality Agreement. We developed a

Master Plan for the Grand Calumet River within EPA, with the assistance of the State, but it was an EPA initiative, and that Master Plan served as a model for the idea for a RAP, and that Master Plan still exists, and it is still being implemented. The State has yet to follow up and make it an official RAP, but we do have the Master Plan in place there, and EPA prepared it as a model for other Remedial Action Plans.

Senator LEVIN. OK. On the second one, Waukegan Harbor, apparently there is no work that has been done on the RAP. My question is whether it is true that the EPA told the State—I think it was Illinois, in this case—that it doesn't have to work on the RAP until a separate cleanup plan, which is already underway on parts of the site, is completed. Is that accurate? Is our information accurate, does anybody know?

Mr. ADAMKUS. I would like to respond on the Waukegan Harbor. This has been an unbelievable 10-year struggle over there which became almost my personal obsession. And I am happy to report to you that finally, the Waukegan Harbor Consent Decree has been entered, and the company is committed and willing to start work immediately. So the cleanup on that entire Waukegan Harbor—actually, that is a RAP process over there—is finally at the stage where the work will begin and the cleanup, not only talking about the plans, but the actual cleanup will probably begin within weeks.

Senator LEVIN. Well, now, my question, though, was a little different than that. I understand there was a consent decree in October 1988 for Waukegan Harbor. My question, though, is whether that is a cleanup which is partial.

Mr. ADAMKUS. No. It is a total cleanup of the entire harbor.

Senator LEVIN. So that covers the entire area of concern?

Mr. ADAMKUS. In the Waukegan Harbor, yes.

Senator LEVIN. It does? All right. Do they have to file a RAP, then, or are they off-the-hook?

Mr. ADAMKUS. No.

Senator LEVIN. OK. That takes the place of the RAP totally?

Mr. ADAMKUS. Correct.

Senator LEVIN. The third one here is Sheboygan Harbor in Wisconsin. There, the first RAP submission date was December 1986. They missed that one. Then, October 1988, and they missed that one. The newest one is December 1989. What is going to happen if they miss that deadline?

Ms. FINCH. They do have it planned now for, I think, December of 1989.

Senator LEVIN. What happens if they miss it?

Ms. FINCH. This goes back into the State plans that Chuck was referring to. This is where we use the leverage of the water program plan that we have with them.

Senator LEVIN. So you are telling us now that you are intending to use that leverage.

Ms. FINCH. I think that is exactly what Chuck said.

Mr. ADAMKUS. Senator, every year we are actually negotiating the work plan for each individual State, and definitely the RAP process will be negotiated, and we will use everything possible through that process to urge them to meet the deadline.

Senator **Levin**. Including use of the leverage which we have talked about—is that fair?

Mr. **Adamkus**. Yes, sir.

Senator **Levin**. OK. Now, on the fourth RAP, the Milwaukee Estuary, that one has gone from 1985, and now 1991, I believe, is the new date. That is a 6-year period, again, I emphasize, just for a plan of action. If someone told me it took 6 years to clean it up, I think I would probably say that sounds like a long time, but at least it sounds reasonable. I would probably say it sounds like a long time; I'm not even so sure I'd add that at least it sounds reasonable. It would sound like a long time to me, frankly, to clean it up. But we are talking about 6 years for a plan. That is off the charts as far as I am concerned.

Why does it take 6 years just for a plan for a cleanup?

Mr. **Sutfin**. That particular plan is in Wisconsin. Wisconsin has given priority to the Green Bay RAP, and I think that is the basic reason, that it is a matter of priority, where are you going to put your resources first; are there ongoing activities in the Milwaukee Estuary that will happen with or without a RAP. I mean, those are decisions that the State has to make on where to put its resources and which one to work on first. They worked on Green Bay first.

Senator **Levin**. So you mean that this process allows the States to do one of these at a time?

Mr. **Sutfin**. Well, they don't have funds to do them all at the same time, that's for sure.

Senator **Levin**. Michigan submitted three RAP's so far—three out of four on Lake Michigan. I mean, if you are going to tell the States that, gosh, it is OK if you just do one at a time, it is going to be forever before the plans are there.

Why can't a State give you the plans for cleanup even if they say, "Here are our four plans; we are going to do the funding on this one first, this one second, this one third" or "We are going to do two at a time" or whatever? If you won't even require them to file their plans, it seems to me that this is going to take forever.

Ms. **Finch**. Senator, I agree, it seems like an interminable process. One of the things that has happened within the last year is that the International Joint Commission has revised and put out listing and de-listing criteria. When they did that, many of the States withdrew their original dates and decided that they did not have a RAP that would meet the criteria developed by the International Joint Commission had put out.

So some of the States are saying that they need more time to do the very extensive and intricate work that is required by the International Joint Commission criteria.

Senator **Levin**. Was there a delay in the EPA contract which would help write the plan for Milwaukee?

Ms. **Finch**. Not that I am aware of.

Senator **Levin**. I think there has been. You might check it out. We think there has been a 6-month delay in that contract with the EPA.

Let me turn to maybe a larger picture, a little bit away from Lake Michigan, to look at all the hotspots, just to give you some of the numbers on this. There are 42 toxic hotspots; 30 are in the United States. Some of those are joint, but we will say 30 of those are in the United States. That means that we will have to complete 30 Remedial Action Plans for these toxic hotspots.

So far, we have submitted to the International Joint Commission a total of 10 RAP's—one from Wisconsin and nine from Michigan. So we have had 10 out of 30 after 4 to 5 years' work. We have turned in just one-third of the plans, proposals—these are just proposals for consideration that the United States is responsible for. Two-thirds of these plans are not even in.

It is too slow. It is just simply too slow a process. You folks have some leverage, and we do not believe you have used it. We obviously believe there will be resistance, but it is your role to apply some leverage, because at the rate we are going, we won't even have our plans done for the hotspots that we have identified until the middle or the end of the 1990's. And that is not the cleanup; it is the plans for the cleanup.

What can you do to speed this process up?

Mr. ADAMKUS. Senator, I would like just to comment that definitely, if we are looking just for the plans, maybe with pressure, maybe compromising the quality of the plans, we can probably come up with all of the remaining 30 plans. But I personally have a big problem with this, because those will be plans, pieces of documents, which I do not believe we will be able to implement, the States will not be in a position to implement, and I do not believe that we will be even in a position to force the States to commit above their resources when they definitely know that they are not able to implement those plans.

So I agree with you. I told you before that I am frustrated with the slow process. It is really unbelievable. But at the same time, being already old enough to recognize the realities of life, of implementation, I have to swallow that and see how we can realistically and the best way we can implement and at least move the process so that this is not going to stay only on paper, but we can clean up those hotspots.

Senator LEVIN. Is there any reason why we shouldn't set some deadlines for the submission of these plans?

Mr. ADAMKUS. No. We can, and we probably should.

Senator LEVIN. Will you let us know, or give us a recommendation for reasonable deadlines, milestones, for the submission of these RAP's and give us also, in addition to that, a recommendation as to whether we should make it statutory or whether you would do it administratively?

Mr. ADAMKUS. Yes.

Senator LEVIN. So we need two recommendations from you. One is reasonable deadlines for submission of the RAP's, and the second one would be whether you intend to make those deadlines administrative or whether or not we should do it by statute.

Mr. ADAMKUS. Fine. We will do that.

Senator LEVIN. OK. One of the goals that the Great Lakes Water Quality Agreement set was to get the Great Lakes States to develop common standards, uniform standards, which are consistent with the Agreement and again uniform, consistent with each other. But another chart [1] we have up there, the horizontal chart up there, shows that there still is no single system that has been agreed to by the Great Lakes States.

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[1] See p. 305.

I believe that you indicated in your oral statement, Mr. Adamkus, that in a meeting held yesterday, there was unanimous support from States for developing a set of uniform water quality standards for the entire Great Lakes Region. Where was that meeting?

Mr. **Adamkus**. Mr. Sutfin participated in that meeting.

Mr. **Sutfin**. That meeting was held at O'Hare Airport in Chicago. It was a meeting that I was invited to of the Great Lakes Environmental Administrators, which is an organization of the top administrators of each of the eight Great Lakes States.

Senator **Levin**. What was the bottom line outcome? Did they agree to certain deadlines to set common standards?

Mr. **Sutfin**. Well, if I could, I'd like to back up and explain the process that we use in EPA with the States to set water quality standards for the Great Lakes. The Clean Water Act establishes the framework that we follow for setting standards for the Great Lakes. The way it works is we develop national criteria under section 304(a) of the Clean Water Act and then States have the total authority to set standards consistent with those criteria for application and NPDES permits and in other regulatory activities such as nonpoint source control or whatever.

So we set at the national level criteria; the States set at their level standards. Those standards then are applicable in regulatory actions.

To date, EPA has promulgated national criteria under section 304(a) that is universally applicable to all waters of the United States including the Great Lakes. Those criteria in 1987, when Congress enacted the 1987 Clean Water Act Amendments, were made presumptively applicable to State water quality standards for toxics.

In considering the implementation of the Great Lakes Water Quality Agreement, we have looked at the idea of using the authority under section 304(a) to develop a subchapter of the national criteria that would be specifically tailored to the unique needs of the Great Lakes, and we have made a proposal to the Great Lakes Environmental Administrators for such a set of criteria.

Senator **Levin**. Would that be standards or criteria?

Mr. **Sutfin**. Those would be national criteria.

Senator **Levin**. Not standards.

Mr. **Sutfin**. They could result in national standards, but at least to start with we are proposing the development of national criteria that would then be applied by States through their State authority to set water quality standards.

Senator **Levin**. Did the Great Lakes States that you met with yesterday agree that they would apply those criteria and come up with uniform water quality standards for the region?

Mr. **Sutfin**. I have met with the States collectively about three times now, going through a series of drafts of a proposal that we have made, and at the meeting yesterday, the States unanimously concurred with the proposal and with the idea of proceeding with the proposal.

Senator LEVIN. Is there a major new initiative there for the Great Lakes? I am trying to figure out exactly whether this is a big initiative——

Mr. SUTFIN. I believe it is a major new initiative.

Senator LEVIN. Could you tell us what is new about it, because I don't quite follow.

Mr. SUTFIN. What is new about it is that up until now, we have used the nationally applicable criteria to direct State development of water quality standards, and those nationally applicable criteria, although protective of the Great Lakes, could be tailored more specifically to the Great Lakes.

Senator LEVIN. Are these stricter standards for the Great Lakes than the national ones?

Mr. SUTFIN. They could be. That is certainly a possible outcome. We have not developed them yet——

Senator LEVIN. Are you going to develop them, or are the States going to develop them?

Mr. SUTFIN. It will be developed through a joint effort of the States, EPA, with substantial involvement of the public, the regulated community, the environmental groups and so forth.

Senator LEVIN. But will they be promulgated by the EPA?

Mr. SUTFIN. Yes.

Senator LEVIN. After consultation from the States—or must the States agree to them?

Mr. SUTFIN. No. EPA will be the decisionmaker. EPA has to use its authority under section 304(a) to set criteria. But it will involve substantial help from the States in developing the package.

Senator LEVIN. I understand. So the criteria are adopted by EPA, and then the States must meet those criteria.

Mr. SUTFIN. Right.

Senator LEVIN. Have the Great Lakes States agreed to adopt a uniform set of standards once those criteria are adopted?

Mr. SUTFIN. Once the criteria are adopted the States will then, under the authority of the Clean Water Act, have to set State standards that are consistent with those criteria.

Senator LEVIN. But not necessarily uniform.

Mr. SUTFIN. If there is reason for differences among the States, those reasons will have to be based on sound technical scientific facts.

Senator LEVIN. So you would expect, then, that adoption of these criteria by the EPA after consultation with the States and input by the States will lead to uniform standards in the Great Lakes States.

Mr. SUTFIN. I don't want to mislead you. They will lead to much more uniform standards, not necessarily the completely uniform standards.

Senator LEVIN. OK. When will we have these criteria? What is the timetable for these criteria to be promulgated by the EPA?

Mr. SUTFIN. Well, we haven't made the final decision to proceed yet, Senator. We now have, I believe, the conceptual support of the States and——

Senator LEVIN. What is the timetable for a decision to proceed to promulgate the criteria? When will you make the decision whether or not to proceed?

Mr. SUTFIN. We will now begin a series of meetings with interest groups in the Great Lakes Basin to enlist their support for the idea, get their ideas——

Senator LEVIN. Just give me a guesstimate. Are you talking about a month, a year—give me an idea.

Mr. SUTFIN. I am guessing in the next couple months we will make a decision whether or not to proceed. I should point out——

Senator LEVIN. I understand. So we could——

Mr. SUTFIN. I should point out that the proposal so far has been discussed in a fairly limited context with the States, and I have not had a chance to really discuss it widely with interest groups outside EPA.

Senator LEVIN. I understand. But you will expect that by the fall that you will decide whether or not to proceed?

Mr. SUTFIN. At least by the fall, yes.

Senator LEVIN. At least by the fall. OK. And then if you do decide to proceed to promulgate uniform criteria, about how long will that process take before the criteria are promulgated?

Mr. SUTFIN. Our initial thought was to try to get the guidance in place to be able to impact the next triennial review of State water quality standards. The Clean Water Act sets up a triennial review process. Every 3 years, the States have to look at their standards in light of the criteria and make revisions as appropriate, and——

Senator LEVIN. I just want an estimate of a date from you.

Mr. SUTFIN. I would say in 1990; that is our objective.

Senator LEVIN. I am just trying to get a rough outline here.

Mr. SUTFIN. Yes. We are not sure we can meet that date, but that is the initial goal.

Senator LEVIN. All right. So what you were hoping for and think is reasonably to be hoped for is that by this fall, you would decide whether or not to adopt these criteria and that within a year or so roughly after that, the criteria could be promulgated—roughly—I am not setting——

Mr. SUTFIN. Roughly and very optimistically.

Senator LEVIN. Oh—that is too optimistic? Well, what is a conservative guess?

Mr. SUTFIN. It could take 2 years; it could take twice that long.

Senator LEVIN. It could take up to 2 years to adopt the criteria after the decision to adopt them has been made. I am just trying to get a timetable here. I am not doing anything other than that. I want to just get some milestones.

Mr. SUTFIN. Yes.

Senator LEVIN. OK, now, once the criteria are adopted, let's say 2½ years from now at the outside, hopefully, then States must meet those criteria—right?

Mr. SUTFIN. Well, then States must go through a State rulemaking process to adopt standards consistent with those criteria.

Senator LEVIN. Right; they must adopt standards to meet your criteria.

Mr. SUTFIN. Right.

Senator LEVIN. Those standards—we don't have an agreement yet among the Great Lakes States that those standards will be uniform. You think they will be more uniform than they are now, but we don't have an agreement—are you telling us that they will be uniform?

Mr. SUTFIN. Well, we don't have the authority to make them uniform through this process.

Senator LEVIN. No, I'm not saying that. I'm saying is there an agreement among the States that they will be uniform? I'm not saying you have the authority to require it. I'm just asking have the Great Lakes States agreed that they will be uniform?

Mr. SUTFIN. No, not at this point.

Senator LEVIN. OK. So we are still a long way away from uniformity of standards for water quality.

Mr. SUTFIN. That's right. And the reason for that is the structure of the current Clean Water Act. The Clean Water Act clearly establishes the responsibility for setting standards with the States under national criteria.

Senator LEVIN. You don't have the authority, you believe, to mandate those standards; is that correct? You don't believe you have the authority to mandate those standards.

Mr. SUTFIN. Well, we have the authority to disapprove State water quality standards that are inconsistent with the national criteria.

Senator LEVIN. But you don't believe you have the authority to mandate specific standards for the Great Lakes States, for instance.

Mr. SUTFIN. I haven't really researched that from a legal perspective.

Senator LEVIN. Would you do that? That is a pretty important question. It seems to me that underlies everything here as to what authority you have or do not have.

Mr. SUTFIN. That certainly hasn't been the common practice in implementing the Clean Water Act to date.

Senator LEVIN. I'm not suggesting it should be. All I know is that how much clout and leverage you have over the States depends on what your authority is to do it yourselves. I mean, you are asking here for voluntary——

Mr. SUTFIN. We have the authority to find State standards to be inadequate to protect the uses——

Senator LEVIN. Oh, I understand that.

Mr. SUTFIN [continuing]. And to then promulgate Federal standards in lieu of State standards.

Senator LEVIN. You do?

Mr. SUTFIN. We do have that authority.

Senator LEVIN. Oh. So you do have the authority to promulgate Federal standards if you find the State standards are inadequate?

Mr. SUTFIN. That's correct. But we have to make that finding first. We can't just unilaterally set Federal standards.

Senator LEVIN. All right. But once you make a finding that State standards are inadequate, you have the authority to set your own.

Mr. SUTFIN. Right.

Senator LEVIN. OK. Well, that's a very important authority that I think, providing everybody understands it, may allow you to get some quicker action.

Mr. SUTFIN. Oh, they understand it.

Senator LEVIN. But it didn't seem like you thought you had it, though. A minute ago you said you haven't legally——

Mr. SUTFIN. Well, I misunderstood your question. I thought you were asking whether we had direct authority to promulgate Federal standards.

Senator LEVIN. And the answer is only after disapproval of State standards. That is a lot of authority.

Mr. SUTFIN. Yes, sir.

Senator LEVIN. OK. This may sound to folks like an awfully abstract issue. It is a very real issue because States are under pressure to keep their standards low instead of high, because it means that industry can be attracted more to those States because there is less of a regulatory burden on them. So let me tell you——

Mr. SUTFIN. Believe me, Senator, I understand that. I have spent a good part of my life in the last 3 or 4 years dealing with that particular issue.

Senator LEVIN. Yes, but we've got a problem in Michigan, because when we have to compete with States that have lower standards than we do—and that is the situation right now—we are at a competitive disadvantage. So we are hoping that you will use that authority to prod us and our neighbor States into uniform standards. Number one, it makes sense in terms of water quality, but number two, it puts us at a competitive disadvantage if we don't have that kind of uniformity.

So the water quality, which is your business, is hurt; the economic competition, which is all of our businesses, is also harmed.

Should we put the timetable in law?

Mr. SUTFIN. There is a timetable in the law.

Senator LEVIN. No. I am talking about that half-year for you and the 2 years after that at the outside for Great lakes criteria; should we put a timetable in the law?

Mr. SUTFIN. There already is a timetable for EPA publishing criteria in the Clean Water Act on a general basis. In terms of the Great Lakes idea, I don't think it is necessary. I have got the commitment of the States to proceed. Now I am seeking the support of the regulated community, the environmental community and the general public. If we get that, then we will proceed.

We think that this is a good way to implement the Great Lakes Water Quality Agreement because it uses the very clear and strong authority of the Clean Water Act to get the job done.

Senator LEVIN. If we put a 2-year outside limit on EPA coming up with criteria for the Great Lakes in a statute, would you think that would be reasonable?

Mr. SUTFIN. I really cannot answer that yet, sir. We haven't laid out a plan yet for completely doing the job.

Senator LEVIN. Well, one of the purposes of this hearing is to try to get some milestones in law, because without those milestones this is hash; I mean, this stuff just drags on. So milestones in law are good because they will prod us. Just the way Mr. Adamkus indicated you would get back to us on those earlier milestone issues, would you let us know whether or not you believe that would be a reasonable target to put in law for the EPA, and if not, what you think would be a reasonable target?

We have frankly got to hold our feet to the fire—Congress' feet, your feet. We have got to hold our feet to the fire.

All right. Now on sediment cleanup, just a few questions and then we are going to have to get on to our next panel.

As you indicated, I believe, Mr. Adamkus, the Clean Water Act authorized sediment cleanup demonstration projects in early 1987. The money was provided in late 1987, and now, 16 months later, we are still not under way with demonstrations—actually broken ground.

Have you finalized at least the technologies to be tested?

Mr. **Adamkus**. We have laid out some schedules.

Senator **Levin**. Do you have the schedule?

Ms. **Finch**. Yes, we do. In fact, I think we have actually fleshed out a lot more of the plans for what we are going to be doing. We have established a committee process. Our management committee met in December and established technical committees which have been working over the last 2 or 3 months to determine what the approach would be. Your staff person, Elise Bean, has been given a copy of the matrix which lays out the work in particular in the five areas that are named in the Clean Water Act. We feel we are making considerable progress.

There has been a lot of work that has been done and will be done at each of these sites, and is one of the things we need to look at in our work plan. We are trying very hard to take the money that we have and leverage it so that at the end of this process we can deliver back to Congress and to the State and local governments a report that will allow them to determine how they can go about cleaning up the contaminated sediments in their particular areas.

This is the process we are going through right now. We expect to have a work plan in place for distribution to public groups, RAP coordinators, in May, and then we will have another meeting of our committee in June to finalize it.

It is important to understand that we have been doing work at each of these sites. In particular, for example, with Sheboygan, which is a Superfund site, we just met on a couple of weeks ago with the Superfund people, and we are going to be able to leverage work that is being done there with information we need in our program.

Senator **Levin**. OK. My staff has indicated that since we have gotten into this, the EPA's Great Lakes Office has indeed responded in a positive way, and there is lots of work going on.

I think this may be one of the advantages, by the way, of Congressional inquiry—it shows an interest——

Ms. **Finch**. Yes, it does.

Senator **Levin** [continuing]. And prods agencies to establish some priorities. And we think you have done that in response to this indication of interest, and we are glad for that.

Just on the Saginaw Bay issue, we have been told that for Saginaw to keep even with these other sites that it has to have certain toxicity tests done this year on its sediments. My question is whether or not the EPA is planning to do those tests this year?

Mr. **Horvatin**. So far last year, the State of Michigan DNR had gone ahead and collected a large number of sediment samples in

Saginaw River and Saginaw Bay. And in discussing that with the State representatives, they did indicate that there is a need to go along with the data they collected for the toxicity tests to be done on some of the samples.

So as part of the contaminated sediment program in EPA, we are intending at this point to run toxicity tests through some of the Federal agencies at the labs that we have already set up. In addition to that——

Senator LEVIN. My question, though, is are you planning to do those tests on those sediments from Saginaw Bay this year? That was my question.

Mr. HORVATIN. Yes. Right now, we have a tentative schedule, and the intent is toward the end of September to collect additional sediment samples and with those samples, we are running both chemistry and biology tests on them.

Senator LEVIN. So Saginaw is not going to be left behind in the program if you can get those tests done.

Mr. HORVATIN. Right. The thing is, though, the laboratories have a limitation on the number of samples they can run at any given time, so it is a matter of sequencing them over the next 6 to 9 months. But yes, the Saginaw Bay will have its samples analyzed.

Senator LEVIN. This year.

Mr. HORVATIN. This year.

Senator LEVIN. One or two questions on air toxics, and then we are going to have to push on. I believe, Ms. Finch, it was in your letter that it was indicated that there are now two master monitoring stations to measure air toxics in both dry and wet conditions.

My question is: Didn't the March 1987 report which was issued by your office call for five master stations—one for each of the Great Lakes? And why, if so, has the number been dropped from five to two?

Ms. FINCH. Well, we are anticipating probably adding the other three to the system. What we want to do is to use the ones that we have now to determine what kind of toxic monitoring we need to do. This is being done in conjunction with our Green Bay Mass Balance Study, and out of that, we hope to derive information that will help us to determine not only what kinds of master stations we need but also the types of toxic equipment that we will need on our new vessel for open lake monitoring of toxic sediments and toxics in water.

Senator LEVIN. So that you haven't dropped the number from five to two?

Ms. FINCH. We haven't as of this time.

Senator LEVIN. You still intend to build the five.

Ms. FINCH. Yes, that's right.

Senator LEVIN. The reason it is so important is because of how air pollution contributes to toxics in the Great Lakes. Ninety percent of the PCBs that are present in Lake Superior; more than 50 percent, I believe, of the toxics in Lake Michigan; and an average of 25 percent of the toxics in the Great Lakes come from air pollution. So it is a major contributor to the problem. And that is why, when it sounded like you might be dropping the number of master stations from five to two, that came as a real surprise to us.

Are you saying you are still planning on building the five?

Mr. **Horvatin**. One of the issues that came up in the original scope of setting up the stations was that there is no technology per se that we are able to just pull off the shelf and use. Originally, the plans were that we would have the stations in place based on some technologies that we thought would work. After we got the first station started and started getting it together, we found out that it wasn't quite applicable to do the level of organic detection levels that we wanted. So basically, some basic research had to go in to try to figure out the appropriate way to collect the samples and preserve the samples prior to analysis.

So there was some basic research that had to be put in there, which is one of the things that sort of slowed the process down to that point.

Senator **Levin**. I understand the process has been slowed down, but my question is is it still your intention to have five of them?

Mr. **Horvatin**. The intent is to go ahead, but——

Senator **Levin**. With five?

Mr. **Horvatin** [continuing]. With five—but instead of putting the units out there with technology that we are not too sure is going to give us the results we want——

Senator **Levin**. I was just pressing on the number issue. It is still the intent to have five master stations; is that correct?

Mr. **Horvatin**. Yes.

Senator **Levin**. You could do us a big favor, Mr. Adamkus. We have been waiting very anxiously on that Kalamazoo River issue, and you have been very helpful on it. Again, we are grateful that you nominated it for the National Priorities List. It is important to us in this State that it be on that list. You have put it there as far as you can go, and now it is up to the next person up the line to approve that list.

My staff yesterday talked to Jonathan Cannon. He simply said it is sitting there on his desk. I am not sure he realizes how long we have been waiting, how important it is to us. Sometimes the distance between a State and Washington is much more than the miles; it sometimes seems like light-years. He said he would get to the list in the next day or so. I am wondering when you leave here and before you have lunch and he has lunch, if you would give him a call and tell him you've got a Senator and a whole bunch of folks in Grand Rapids and Kalamazoo who would just love to know today, while we are gathered together, whether or not he has approved it. If so, could you just pop your head back in and say it is all set? I think you would be a hero for the morning.

Mr. **Adamkus**. I will try, Senator.

Senator **Levin**. OK. I want to thank you and your colleagues for coming forth. There is some information you are going to be getting us in terms of deadlines, and we look forward to receiving it.

We have to keep the pressure on ourselves. It is not just us pressuring you, frankly. It is that we want you to pressure the States. They are going to then put pressure on us and the Congress to relieve some of the pressure that you are putting on them. We know that process. The only way it is going to get done, though, I guarantee you, is if you are the engine for this very critical effort to preserve our Great Lakes.

You have been in this a long time—and by the way, I have, too. I look very young, but I want you to know that in the early 1970s when I was on the City Council in Detroit, the phosphate effort that you talked about started on that City Council with my ordinance to limit the city's use of phosphates and detergents. We were told it doesn't make any sense to do it just for the city; you've got a whole region, a whole State, a whole country. But we did it anyway. We passed an ordinance in Detroit. We had all the detergent manufacturers ticked off at us, because that meant they had to put out two different kinds of detergents. But we made our little step, made our stand, and it led to the State doing something. I remember testifying in Washington, and finally Washington adopted that standard. I think it was 8.7, as I remember, something like that—you may know better than I do. But at any rate, these efforts work. Sometimes we all get frustrated because it seems so slow, and I surely am frustrated by the progress with this Great Lakes effort. But please put that pressure on our States, and when they get mad at us and the Congress because we got you to do it, we'll say, "Hey, we helped put them up to it. Now let's get on with the job."

Mr. ADAMKUS. We are grateful to you, Senator.

Senator LEVIN. Thanks, and if you could make that call, we would appreciate it.

Mr. ADAMKUS. Thank you.

Senator LEVIN. We just happen to have his telephone number, too, to make it easier for you. Staff will give that to you.

Our next panel—a little bit later than expected, and I appreciate your patience—is Mr. Del Rector, who is the Deputy Director of the Michigan Department of Natural Resources, and he is representing David Hales, the Director, who could not be with us today. We also have Mr. J.D. Snyder, who is the Director of the Office of Great Lakes for the Michigan Department of Natural Resources.

Gentlemen, thank you for being here, thank you for your patience. The first panel took a little longer than we expected. We did not meet our own deadline.

Please proceed. We will be happy to hear from you.

TESTIMONY OF DEL RECTOR, DEPUTY DIRECTOR, MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Mr. RECTOR. Thank you. I appreciate the opportunity to make this presentation this morning on this important issue to the Great Lakes.

You have prepared testimony from Director Hales.[1] I would like to highlight a few portions of that testimony. I would also like, I guess, to deviate from it some because as I have listened to the discussion this morning, I hear a lot of talk about plans and delays in preparing plans. I hear talk about the Clean Water Act, the Water Quality Agreement, the Remedial Action Plans. And I think to really get at the heart of the issue, if you are talking about the Great Lakes, you are talking about preventive programs, how do you stop the pollution from going into the Great Lakes and what is being done to prevent that pollution, and how do you clean up the pollution that has already occurred.

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[1] See p. 150.

What are the areas in which that pollution occurs in the Great Lakes? You have point sources, water discharges that are going into the Great Lakes. Michigan has been a national leader in limiting the toxic discharges into the Great Lakes through the water route.

EPA has been supportive of this area, but as you have heard, the other States are falling behind, and EPA has an obligation and responsibility to make sure that we have a more uniform effort in the Great Lakes Basin.

Nonpoint sources also contribute to pollution of the Great Lakes. We are addressing vigorously those nonpoint sources. EPA, through appropriations from Congress, has given money to help the States address nonpoint sources. That money runs out this year, so any additional nonpoint source effort efforts will have to be taken on Michigan's part alone, not with the help of EPA grants.

Combined sewer overflows, which has been an issue of some significance in this area, in our efforts to control the combined sewer overflows that go into the Grand River and out into Lake Michigan—we are pursuing that aggressively in the Detroit area, on the Rouge River, where we will have draft permits before going to the public and to the Water Resources Commission by midyear.

EPA recognizes the problem of combined sewer overflows, but they restrict our use of construction grant money and State revolving loan fund money to fund cleanups and progress for installing controls for combined sewer overflows.

You just mentioned, Senator, that air toxic and air pollution are important contributors to Great Lakes problems. EPA's record in dealing with air toxics has been abysmal. You just quoted some of the loadings to the Great Lakes. EPA has done a study that indicated in our major urban areas in this country that the risk of cancer just from toxic air pollutants could be as high as 1 in 1,000—1 additional cancer risk for every 1,000 people.

If that is true, it is on of the most significant environmental health threats that we have, yet EPA has no air toxics program.

Michigan has had an air toxic's program since 1980. We issue approximately 1,200 air permits a year for new dischargers; 800 of those 1,200 have limits for toxic air discharges.

If we talk about cleanups, you talked about the Remedial Action Plans when you talked about cleanups of the areas concerned, again, as you have noted, Michigan has moved forward.

Senator **Levin**. By the way, let me interrupt for a minute. I don't think Canada has submitted any of their RAP's. I should have mentioned that before. Michigan is number one in this country by far. Other States fall behind us, but I think Canada has 12 of these RAP's that they are obligated to file with the Joint Commission, and I do not believe they have filed number 1 of 12. Excuse my interruption, but since you mentioned that point——

Mr. **Rector**. I was just going to mention that the process has been slow. It is not just the process between EPA and the States, but the International Joint Commission process, the Water Quality Board process involving two countries, who seem to go at the speed of the slowest mover in the process, and that is part of the problem.

There was a lot of discussion on the Remedial Action Plans, and on page 11 of the Director's full testimony, we go into the history of that in some detail. Because of all the questions before, I am going to cover some of that which I thought was important to put on the record this morning.

In 1985, EPA's Great Lakes National Program Office offered support to the Michigan DNR in the form of a contractor to develop draft RAPs, Remedial Action Plans, for Michigan's areas of concern. We accepted that offer, and the contractor began to prepare those drafts for seven of Michigan's areas of concern in 1986. Staff from EPA were assigned as EPA RAP coordinators for all 14 Michigan areas of concern to oversee the contractor's work, to provide information as needed and coordinate EPA's review of the draft RAP's.

The draft RAP's were neither timely nor of acceptable quality. As a result, deadlines were missed, and six of Michigan's RAP's were submitted to the International Joint Commission 10 months behind schedule. The seventh RAP was submitted 18 months late. Ultimately, the DNR decided to develop the remaining RAP's without the assistance of the EPA contractor.

In March 1987, the Great Lakes National Program Office agreed to complete their review of all of Michigan's draft RAP's within 30 days in an effort to complete the RAP's in a timely manner. That did not happen. EPA's comments have either been late or not submitted at all. Thus the RAP's submitted to the IJC for review and comment have either been late or without EPA involvement.

The Great Lakes National Program Office has provided comments on completed RAP's as part of the International Joint Commission review process. But that is after they have been prepared, and that discourages collaboration and cooperation between Michigan and EPA, which we believe should occur while the RAP's are still in the draft stage.

EPA's current involvement in the RAP's from our perspective has not improved. Mr. Adamkus indicated that this is primarily a State effort. I agree with that. We have State responsibility. And they are not involved in the preparation of the RAP's. But there can still be participation and representation on those Remedial Action Plan teams which have been formed.

We go on to provide some additional detail there that I think speaks well to the points that you were bringing out before, Senator.

We must move forward in several areas. We need to protect the lakes from air deposition. We need to have uniform, Basin-wide criteria for toxics in our water discharges. We need to control nonpoint sources. We need to beef up the research and cleanup demonstration projects. We need to foster new cleanup technologies.

These are difficult and awfully costly problems to solve. They require—indeed they demand—comprehensive cooperative efforts among the Great Lakes States and EPA. We must be ever more innovative and effective in defining the right balance in our Federal-State partnership to win the toxic fight. Basin-wide programs must be pursued vigorously in order to address toxic problems in the

Basin ecosystem. Just as we share the lakes, so we must share in their stewardship.

We have been a true leader in the fight against toxic contamination. In addition to the other things I have mentioned, we have banned dangerous substances such as DDT and PCB's years before Federal action. Our water quality programs and air quality programs have been a model for not only the region, but for the Nation.

But we cannot win the fight against toxics alone. The Basin needs the full commitment of the EPA to win this fight, and we need the right tools to do the job. Without doubt, one of those important tools is money. We need fully funded Great Lakes Water Quality Programs both at EPA and at the States.

The Clean Water Act recognizes the Great Lakes as a valuable national resource. There is money available through fiscal year 1991 to the Great Lakes National Program Office. This funding is to be used for toxic control demonstration projects, research and monitoring. To continue our progress in restoring the Great Lakes water quality, the EPA needs to begin fully funding these projects.

I would also like to take this opportunity to point out that Michigan is currently facing millions of dollars in Federal funding cuts in our water program alone. My Surface Water Quality Division faces a $3.7 million shortfall next year because of reduction in Federal grants. That is 36 percent. That drastic cut threatens the substantial progress that we have made and the integrity of our monitoring and compliance activities. That Federal budget reduction will be increasing to approximately $5.4 million in 1991—a 50-percent decrease.

To replace this lost funding, we will be seeking fees from those with water discharge permits. But if the cuts stand, and our fee package is not enacted, we will fall behind in our efforts to protect the Great Lakes.

Funding is only one of the tools.

Another indispensable tool, as we have talked about already today, is the uniform regulatory standards throughout the Great Lakes Basin. We have been working with Mr. Sutfin and his proposal. We have given our blessing to move ahead. We have some concerns as to exactly how the State and public participation will be handled, so we are anxious to see their final work plan on that. But it is an important step forward. Michigan would have no problems with some overall time schedule, whether it is 2 years—I have not looked at the details, but we would certainly support that time schedule, because even if EPA is willing, if Region V is willing, and the Great Lakes Basin States are willing, by the time it gets to headquarters, they may have a commitment now, but the Office of Management and Budget or something else could impact on that process. So despite all of our efforts and all of our desire, we may still not have the kind of uniform toxic criteria for the Great Lakes that we all desire.

Also in relation to air toxics, we believe that the Clean Air Act needs to address air toxics. The Great Lakes Environmental Administrators yesterday endorsed specific statutory language to deal with the aquatic effects of air toxics. We will be glad to provide that to you and to other members of Congress. We are very interested in having the aquatic systems deal with air toxics.

There is a lot of talk about dealing with the direct human health impacts, but we also need to deal with the aquatic system.

Why focus on toxics in the Great Lakes? Because that is our most vexing problem. Michigan cannot win the fight against toxics alone. This is a battle which requires a commitment of resources of all the States, and EPA, the Congress, the citizens. Together we can succeed. Basin-wide issues like regulatory standards and the air toxics demand Basin-wide solutions. Innovative and aggressive leadership by EPA is absolutely essential to effect Basin-wide solutions among the States, and with our Canadian neighbors.

I look forward to working with you and other members of Congress to achieve the goals in the Great Lakes Water Quality Agreement in protecting this unique Great Lakes ecosystem.

Thank you, Senator.

Senator LEVIN. Thank you very much, Mr. Rector.

First, on the budget issue, I understand that the Administration has proposed two cuts for 1990 that would be particularly harmful to us. One would be in the Great Lakes Office budget of EPA. The current budget for EPA for the Great Lakes Office is $13.5 million. The proposal is to reduce that to $11.5 million. That would be about a 12- or 13-percent reduction.

The other one is in the EPA overall budget. President Bush is proposing that it be reduced from $5.2 billion to $4.8 billion, which would be an 8 percent cut.

Obviously, we are going to fight those cuts, but what would be the effect just of the cut in the Great Lakes Office of EPA on States that are working with that Office?

Mr. RECTOR. They need the resources to move aggressively to deal with the Remedial Action Plans, the Lakewide Management Plans that we have been talking about this morning. As you put pressure on them to do more, they need the tools to do it, and the financial resources are important for EPA to have.

There are other budget items that are of great concern to us. One of them relates to the inadequate funding of the State revolving loan fund, where they propose to only give us half of the money that they had previously promised.

Senator LEVIN. Is that part of their overall budget, the $13.5 billion that they had, do you know? Maybe Mr. Horvatin could answer that—or Mr. Sutfin—could either one of you answer that for us?

Mr. SUTFIN. I think that is part of that number, yes.

Senator LEVIN. It is. So that a further reduction in that number would hurt us even more.

Mr. RECTOR. Yes.

Senator LEVIN. OK. While we are interrupting your testimony, that cut in the Great Lakes Office of EPA that is being proposed from $13.5 million to $11.5 million, which is, by the way, a 15-percent cut—my staff has just corrected my arithmetic—is that something which was proposed to the Administration by the EPA? Could one of you answer that question?

Mr. SUTFIN. I cannot answer that question, Senator.

Senator LEVIN. All right. Ms. Finch——

Ms. **Finch**. Sorry, I was waiting for a phone call.

Senator **Levin**. That's great. I don't want to interrupt that. I will ask this question later.

We were just talking about the funding of the Great Lakes Office. Apparently the Administration has proposed a cut in funding from $13.5 million, which is the current funding, to $11.5 million. Is that something that came from the EPA? Did they offer up this cut or propose this cut to the OMB; or is that a decision of the OMB?

Ms. **Finch**. That was a recommendation that was forwarded by the Administration to OMB. It includes——

Senator **Levin**. But that didn't come from you; it came from above you down to you; is that it?

Ms. **Finch**. Well, it was part of the overall agency process. It blended in with the Agency budget work. What is basically indicates is that we are supposed to be through with the ship by that time.

Senator **Levin**. With the what?

Ms. **Finch**. The new vessel that we are purchasing. So the cut is to indicate that we are through with that particular phase.

Senator **Levin**. So that other than that, there is no reduction in any of your programs?

Ms. **Finch**. No.

Senator **Levin**. Thank you. I did not want to interrupt the mission that you are on there.

Do we expect that there will be any funding from the Federal Government for the cleanups that the RAP's are planning, and if so, what would the source be?

Mr. **Rector**. There is no source at this time, unless it is a Superfund site, that I am aware of.

Senator **Levin**. On the uniformity issue—we talked about those uniform water quality standards—how important is it to Michigan that the EPA obtain, cajole, extract, require, whatever the right verb is, uniform water quality standards in the Great Lakes Region. Our standards, as I understand it, right now are stricter than other States' for the most part. That is darned good for the water, and we are all for it. But it tends to hurt us competitively if we have a stronger regulatory regime than the other States do, because then they are able to appeal to industry on the ground that they burden them less with regulatory standards than does Michigan. So we are at a competitive disadvantage as I understand it—and correct me if I am wrong—by having stricter standards. Our water is better off, but economically this State is at a disadvantage with others.

First of all, is that premise true, or is that not correct?

Mr. **Rector**. In terms of the economic disadvantage?

Senator **Levin**. Yes.

Mr. **Rector**. Certainly, there is that potential. We think there are also some enlightened industries that like to bring their employees to live and work in a State where we have clean water or are working toward clean water. So it cuts both ways, and long term, we think that there is some advantage to the industry of living in a State with clean water.

Senator **Levin**. All right. I do, too, but I am concerned with the short-term problem.

Mr. RECTOR. Certainly, the short-term permitting can be a problem. I cannot cite companies and specific permits where that has been a factor recently.

Senator LEVIN. I understand.

Mr. RECTOR. Well, we hope it isn't a factor, but at least it opens the door to an appeal to an industry that the short-term costs on permitting are less in some other State than they are in Michigan, because Michigan has tougher standards.

But the answer to your question is that it is critical to Michigan that we have consistent standards in the Great Lakes Basin.

Senator LEVIN. Why?

Mr. RECTOR. Because they are necessary to protect the lakes. If the science indicates that you need to have certain standards in order to protect the public health, the aquatic environment, then those standards are not going to change. The water does not change that much from one place—there can be some unique circumstances, but the water quality demands that kind of protection, more uniform protection than what it gets. So we ought to put our best science toward that and say this is it, and as we learn more, then we change the standards as we learn more.

Senator LEVIN. OK. Now, that goes more to a strict standard rather than it does to a uniform standard. Why is it important that there not only be a strict standard, but that it be uniform?

Mr. RECTOR. The competitive advantage that you talked about obviously is a critical factor.

Senator LEVIN. OK. I think you have covered the question of the EPA contractor in your testimony. I know you have been working hard on designating part of the Kalamazoo River as a Superfund site for a long time, and you are hoping that that piece of paper will get signed in Washington, I am sure. I want to thank you for all the efforts that you and your Department have put in not just on that site but on a number of other things that are so important to the State.

Just a question on the Lakewide Management Plan for Lake Michigan. We have heard that there is going to be a draft, I think it was by July 1990, for that plan. That is what was indicated here earlier. Can you indicate whether you think that is realistic?

Mr. RECTOR. Well, I think it is realistic. I think that is very achievable if we get on with it. My staff that attended the workshops the last couple of days reported to me last evening that they were not as satisfied with the progress that has been made; that there was a lot of discussion, that they thought that they would come out with an outline of how we were going to do Lakewide Management Plans, and they spent a lot of time talking about what the approach should be, without any settlement of the approach.

Senator LEVIN. So are you optimistic that that target—which is no longer a tentative target proposed, but a real, honest-to-God target, adopted—is realistic?

Mr. RECTOR. It is realistic. It can be done. Whether I am optimistic that it will be done—I am more optimistic now that we have an adopted target than I was earlier this morning.

Senator **Levin**. All right. Going back to those uniform standards that we talked about for the States, there was a meeting yesterday which was referred to. Were you at the meeting?

Mr. **Rector**. Yes, I was.

Senator **Levin**. Can you give us your assessment of that meeting? Was it, in fact, an important milestone or a landmark meeting in some way from Michigan's perspective?

Mr. **Rector**. Yes.

Senator **Levin**. Can you put it in your words why?

Mr. **Rector**. We initiated some discussion with the Region V office to encourage them to take up in a public way how they are going to implement the Water Quality Agreement as it relates to the adoption and promulgation of water quality standards by the States. We have encouraged them to look at that consistency issue, and in some measure, their proposal was in response to some urgings that Michigan has made to them. It is important that they are trying to establish a process for doing that.

All of the Great Lakes Environmental Administrators, as Mr. Sutfin said, encouraged EPA to go forward with the process. We recognize it is an important process. We quibbled about a couple details, but none of us thought that that should hold up getting on with the process.

Senator **Levin**. Do you believe there are going to be uniform standards among the Great Lakes States on water quality by the year 1992?

Mr. **Rector**. No.

Senator **Levin**. By the year 1995?

Mr. **Rector**. No.

Senator **Levin**. Ever?

Mr. **Rector**. No—not unless EPA, through some mandate of Congress, says there have to be uniform standards. EPA will develop uniform criteria. I would hope that those would be in place long before 1992. It will take some time for the States to react to those. But what those set up are presumptive norms. The States can still rebut those presumptions, and it has been my experience that there will be reasons—I don't know what they will be, but there will be reasons—that States will say that they should do something other than what EPA has proposed as uniform criteria. But I believe that they will be good standards—they will not be totally uniform standards, but we will have much better standards than we have today.

Senator **Levin**. So you think it is going to require a congressional mandate of some kind to get uniformity? Otherwise, the EPA, without a congressional mandate, has to use existing authority to reject the State standards which have been adopted and then apply their own—and that is not likely, I gather, in your opinion.

Mr. **Rector**. I do not think that is likely because if the States have reason to rebut the presumption, then EPA is going to have trouble disapproving a State standard just because it is different from their criteria. And we have the burden of proof as to why it should be different, and if we can make that proof to EPA, we will end up with some different standards.

I have been in the environmental protection business for over 20 years, and there are circumstances that lead to those kinds of differences. I don't necessarily think it is a problem——

Senator Levin. In other words, you think it might be legitimate for there to be some deviations from pure uniformity.

Mr. Rector. Yes, that is possible.

Senator Levin. The closer to uniformity, the better, from your perspective, but some deviation could be justified. Is that a fair statement?

Mr. Rector. Yes.

Senator Levin. Well, thank you very much, both of you, for coming by. It has been helpful; the testimony is helpful, too, and we will make it part of the record.

I am sorry, Mr. Snyder. Did you want to add something? I assumed you two were in partnership here today.

Mr. Snyder. We are definitely in partnership, Senator. I did want to make a few general remarks, if I might, on behalf of the Governor.

Senator Levin. Please do.

TESTIMONY OF J.D. SNYDER, DIRECTOR, OFFICE OF THE GREAT LAKES, STATE OF MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Mr. Snyder. We certainly do thank you for the opportunity to appear here before you this morning to discuss U.S. EPA's implementation of the Great Lakes Water Quality Agreement and the Water Quality Act of 1987.

Over the years, we have learned that protecting the Great Lakes is not a luxury, but the foundation of the Basin's future. The Great Lakes provides us with a $15 billion tourism industry, clean water for industry, a drinking water supply for half of the State's residents, and 120 miles of State park shoreline open to the public. These benefits can only be maintained if we are willing to make future investments in the protection of the lakes.

Last year, in Michigan, we made several major investments in our future. We completed and moved toward implementation of cleanup plans for Great Lakes pollution "hotspots" and made significant progress in implementing the Great Lakes Toxic Substances Control Agreement, a voluntary agreement signed by the Great Lakes Governors 3 years ago. That Agreement represents a critical first step in voluntary regional cooperation to reduce toxics in the Great Lakes ecosystem. By establishing procedures for coördination and cooperation among the Great Lakes States, implementing the Toxic Agreement has led to greater compatibility among State regulatory programs, pioneering cooperative projects in air toxics, uniform fish consumption advisories, and many other innovative regional initiatives.

As Del has pointed out this morning, Michigan cannot possibly win this fight against toxics alone. Strong cooperative leadership by the EPA is essential.

Michigan, along with the other Great Lakes Basin States, has worked diligently to devise and implement regional solutions to these Basin-wide toxic problems. However, it is critical that the

EPA is not only actively engaged in these efforts, but provides effective and skillful leadership to effect Basin-wide solutions to Basin problems.

The citizens of this State have likewise emphatically voiced their support for investing in the future last November when they overwhelmingly approved the Quality of Life Bond. Of the $800 million authorized, $25 million will be used to establish the Great Lakes Protection Fund. This unique initiative will provide funds in the future for State and regional cleanup and applied research projects. Obviously, Michigan citizens feel very strongly about the need to solve Great Lakes Basin problems with a regional, ecosystem approach.

While the Great Lakes Toxic Substances Control Agreement and Great Lakes Protection Fund represent significant, substantive achievements, we cannot rest on our accomplishments. We must continue to fight against toxics in the Basin, and we challenge the EPA to lead this fight.

As a key example of the Governor's commitment to implementing the Great Lakes Water Quality Agreement, the Governor has directed my office, the Office of Great Lakes, to develop an Executive Order to require State agencies to analyze new or revised rules and standards in light of their effect on the Great Lakes. In particular, these Great Lakes Impact Statements will examine how these rules measure up to the goals and objectives of the Great Lakes Water Quality Agreement as well as the Toxic Substances Control Agreement. This mechanism will ensure that Michigan is constantly striving to protect the Great Lakes to the greatest extent possible. In addition, it will give the public the chance to hold State agencies accountable for their actions to protect the lakes.

We challenge the EPA to analyze other States' water quality standards by the same measure as we are willing to impose on ourselves.

Governor Blanchard has also moved forward to seek $350,000 in the next fiscal year budget to support the development of a regional, computerized air toxics database and a regional agreement among the eight Great Lakes States on air toxics permitting. These efforts will help us to tackle the serious Great Lakes pollution problem as we discussed here earlier this morning, but there is a critical role for the EPA to play in combatting this problem. Again, we challenge the EPA to utilize the regional framework already established by the Governors of the eight Great Lakes States—when Del was talking about the Great Lakes Environmental Administrators a couple of minutes ago, he was talking about a work group that was prescribed in the Great Lakes Toxic Substances Control Agreement to carry forward with the goals and objectives of that Agreement.

So we do need to continue to move ahead aggressively to solve these problems with Basin-wide solutions. These are some tough issues—air toxics, uniform water quality standards—no doubt about it. But the States have demonstrated dramatic progress to act, and they have done so voluntarily.

The time is here and now for the EPA to act decisively and more aggressively to achieve the mandated goals of the Water Quality

Agreement as well as those of the Toxic Substances Control Agreement.

Thank you, Senator.

Senator LEVIN. Thank you, Mr. Snyder. You do indeed work as partners. We would appreciate you as well as Mr. Rector getting us some recommendations on timetables. Now, this mainly would be timetables for EPA, but obviously, it involves working with the States so that they can either meet or not meet these timetables.

I have asked the EPA to give us for the record a number of recommendations, if we decide to put some milestones and timetables in the law, on their various functions under the Water Quality Agreement. But we would like input from State agencies as well as to what would be realistic deadlines or goals, target dates, from the perspective of the States. You obviously have a different perspective from EPA, and your perspective is critical.

So we will get you those specific requests that the EPA is going to respond to so that you can give us your suggestions on them as well.

Mr. SNYDER. I will be glad to do that.

Senator LEVIN. Thank you both very much.

Well, Mr. Adamkus, you have been very nice. You have stayed with us. Could you come back up and give us some good news? You've got a smile on your face.

Let me just summarize for our audience here what you were doing, for those who were not in the room. You have been working very hard as the Region V Administrator to get the Kalamazoo River site added to the Superfund list. The State has been working very, very hard with you. The people of Kalamazoo and everyone up and down the river, and all the people who live around Lake Michigan, because the Kalamazoo River contributes a good percentage of PCB's to Lake Michigan, consider the cleanup important to us. We called Washington yesterday, and they had not yet approved your recommendation, so we asked you if you would be nice enough to hold off your lunch and put a little more pressure on them, and you were nice enough to give them a phone call. What is the verdict?

Mr. ADAMKUS. Senator, I just got in touch with Washington, and I relayed your interest in it and asked them if a decision has been made, and I was advised that the document has been signed, and that the Kalamazoo River has been proposed to be included in the national priority list. I am extremely happy, because the Kalamazoo River was of great concern to me, and I believe that we can start right now to go and do the job.

Senator LEVIN. Well, we are again appreciative to you. We have put a lot of pressure on you this morning, and that is part of our job, to oversee how the agencies function. This is a case where you and the Agency have indeed taken a very strong step toward adding a site to the Superfund Program. It is an imaginative step because of the type of site that it is. So we are all appreciative to you for your efforts with EPA Headquarters, just the way we made those efforts.

So thanks for leaving us on an optimistic note here this morning.

Mr. ADAMKUS. Thank you.

Senator **Levin**. Our last panel is made up of Mark Van Putten, who is the Director of the Great Lakes Natural Resource Center of the National Wildlife Federation, which center is based in Ann Arbor. His group is active in a variety of Great Lakes issues. He is a staunch defender of the Great Lakes.

I understand that Shari Schaftlein is here. She is a water quality scientist with the West Michigan Environmental Action Council which is based here in Grand Rapids. The Council has become a leader on water quality issues under the direction of Rick Newberry and with the energetic assistance of people like Ms. Schaftlein. They are indeed an asset, not just to their community but to the entire State.

We welcome also Wendell Briggs. He is President of the Michigan United Conservation Clubs, which is the largest environmental group in Michigan. Mr. Briggs and the United Conservation Clubs are very active in helping the Michigan community to write Remedial Action Plans for various toxic hotspots in the Great Lakes. They have been of great assistance around the State, particularly in Saginaw, on that issue which we have discussed.

And finally, we welcome Cameron Davis, who is a Program Associate with the Lake Michigan Federation. The Lake Michigan Federation is a leader on Lake Michigan concerns including Remedial Action Plans and contaminated sediments.

You have been even more patient than our last panel. What I would like to do is have each of you make a statement and then ask questions, rather than to interrupt after any particular witness makes a statement.

I do not know the reason for this order, but if it is okay, we will stick to it.

Mr. Van Putten, we will call on you first.

TESTIMONY OF MARK VAN PUTTEN, DIRECTOR, GREAT LAKES NATURAL RESOURCE CENTER OF THE NATIONAL WILDLIFE FEDERATION [1]

Mr. **Van Putten**. Thank you, Chairman Levin, for this opportunity to testify on behalf of the National Wildlife Federation on EPA's efforts to implement the Great Lakes Water Quality Agreement and to protect and restore Great Lakes water quality.

I was one of three environmental group representatives who were members of the U.S. delegation that negotiated the 1987 Amendments to this Agreement with Canada, and I am pleased to be here with you today a few years later to discuss the progress that has been made over that period of time.

Of particular concern to the National Wildlife Federation, since many of our members are avid sport anglers and hunters, is contamination of Great Lakes sport fish and waterfowl and the threat it poses to human health.

Researchers have suggested that the most significant route of environmental exposure to contaminants in the Great Lakes Region is through contaminated food products, especially fish.

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[1] See p. 166 for Mr. Van Putten's prepared statement.

To paraphrase a well-known researcher, one serving of Lake Michigan salmon exposes an angler to the same dose of PCBs that would result from drinking Great Lakes water for 1,000 years.

Wildlife are also being harmed by the toxics poisoning our Great Lakes. Mink, river otter, cormorants, eagles, and osprey eat large amounts of Great Lakes fish and are showing the effects of this contaminated food source.

Unfortunately, EPA has not developed any national criteria or guidance to account for the impact of consuming contaminated fish on wildlife.

There are many different sources of toxics poisoning the Great Lakes and Mr. Rector covered them a moment ago, so I won't repeat his testimony. The important point is that there is no Government program designed to evaluate systematically the significance of these sources and to develop the necessary controls.

In our view, this results not from a lack of legal authority or money, but from a lack of vision and will. What is needed is a holistic or ecosystem-based approach to determine the necessary reductions in toxic loads from all sources and to require that they be achieved according to an ambitious timetable.

EPA's failure to integrate this approach into existing regulatory programs indicates the extent to which the Great Lakes Agreement is ignored and suggests the need for a radical revision in the way EPA addresses this problem.

The Agreement has proven to be remarkably prescient in articulating the fundamental principles to be applied in cleaning up our Great Lakes. For example, it commits the United States and Canada to eliminate to the maximum extent practicable the discharge of pollutants into the Great Lakes. Similarly, it calls for the virtual elimination of the discharges of persistent toxic substances.

These principles reflect the particular sensitivity of the lakes to the effects of toxic pollution and a recognition that stricter pollution controls are necessary here than may be required elsewhere. Unfortunately, the Federal Government and the Great Lakes States have, in general, a poor record of implementing these principles and the other important provisions of the Agreement.

The International Joint Commission continually notes the lack of progress by the United States and Canada in complying with the Agreement. Meanwhile, the U.S. Government quibbles about its legal effect, the Great Lakes States deny responsibility for applying it to their pollution control programs, and the toxic pollution of the lakes continues.

While EPA gives the Agreement lipservice, it has not been integrated into regulatory programs. EPA's slighting of the Agreement is pervasive, as illustrated by a number of examples in my written statement. Time and time again, we see the Great Lakes ignored in the development of EPA regulations, guidance and water quality criteria.

One has to wonder how much credibility EPA will have in representing the United States in negotiating new international agreements on global environmental problems when it has cared so little about implementing this model international agreement.

The second subject I wish to address is EPA's Lake Michigan Strategy and the planned Lake Michigan Comprehensive Plan. In our view, the Strategy is inadequate. It ignores the existing contamination of Lake Michigan fish and waterfowl, and it fails to set any mandatory reduction levels for the sources of the key toxic pollutants. As a result, the National Wildlife Federation has sued EPA in Federal court, challenging the Lake Michigan Strategy, claiming that EPA failed to fulfill its responsibility to require immediate controls on the amounts of the most dangerous toxics dumped into Lake Michigan.

You asked earlier this morning, Senator, about EPA's authority to establish uniform water quality standards, and the answer you were provided was that EPA must first determine that the State standards were inadequate before they could set uniform standards. The reason for our suit again is EPA challenging the Lake Michigan Strategy was that it side-stepped the issue of the adequacy of existing State standards. The basis for our lawsuit was that EPA was required in that document to determine that existing State standards were not uniform and were inadequate. That would have triggered EPA's obligation, as Mr. Sutfin described, to set uniform standards.

But even evaluated on its own terms, the Strategy has failed. In my written testimony, I gave you two examples of where the Strategy, according to its own language, has not been implemented and nothing has been done.

In truth, the Lake Michigan Strategy and the Agreement are window-dressing, and the public is misled by these fine words into thinking that real progress is being made. Until the provisions of the Agreement and the Strategy are given the force of law and integrated into regulatory programs, they will be nothing more.

Thus, you can understand why we are somewhat skeptical that a new plan, the Lake Michigan Management Plan, will make any difference.

Finally, I have been asked to assess EPA's record in requiring the development of uniform water quality standards to protect the Great Lakes. In this regard, EPA's past record is poor, but I am happy to report that there is some reason to hope that this may change.

EPA has never developed any specific requirements that will guide the States in developing uniform standards for the shared waters of the Great Lakes. As a result, EPA currently allows the Great Lakes States to adopt inconsistent water quality standards that exacerbate our existing pollution problems.

For example, EPA allows States to permit the use of dilution with Great Lakes water as a substitute for pollution treatment. This seriously threatens the Great Lakes, since what matters here is controlling the amounts, not concentrations, of persistent toxic pollutants. With the tremendous amount of water in these lakes, this defect can and does mean the dumping of more toxics into the Great Lakes

The National Wildlife Federation and other environmental groups around the Basin believe that this violates the Agreement's requirement of virtual elimination of persistent toxic pollutants. Therefore, we have joined together in calling for an immediate "toxics freeze" to prohibit any net increase in the amount of the most dangerous toxics dumped into the Great Lakes. This "uniform water quality standard," if you will, could be implemented now, by EPA and the States, under current antidegradation requirements, but so far it has been rejected.

You have asked both of the preceding panels about a deadline for coming up with model water quality standards. I will give you one deadline: We will have them in 18 months. We have a grant from the C.S. Mott Foundation to develop model water quality standards for the Great Lakes Region, and we have committed to have those standards available 18 months from today.

EPA has recently suggested that the national guidelines and criteria may be needed to formally implement the Great Lakes requirements. We question whether this needs to be done before EPA can enforce the Agreement, but we are willing to pursue this approach on three conditions: one, it must address all of the key Great Lakes issues set forth in my written statement; two, it must begin immediately, with a firm deadline for completion, and three, the public must be allowed to participate. In that regard I would like to say that our discussions with EPA so far have been most unsatisfactory. EPA's current proposal, which was debated at yesterday's "Glee Club" meeting, as the Great Lakes Environmental Administrators are fondly known, did not include adequate public participation. EPA's proposal is to set up a committee of the public that reports to a committee which then reports to the actual committee that makes the decisions. We will not accept that kind of process.

Mr. Chairman and members of the Subcommittee, I do not mean to say today that all of the solutions to the problem of toxic pollution in the Great Lakes are apparent. But it is clear that the conventional, pollutant-by-pollutant, "dilution solution to pollution" just is not working. While we hear much rhetoric about the importance of the Agreement and the wisdom of the ecosystem approach to Great Lakes management, we see little reflection of this rhetoric in EPA's regulatory and remedial programs.

If we are to begin the job of protecting and restoring these magnificent "sweetwater seas," we must start now. EPA and the States should immediately adopt a "toxics freeze" to prevent increased loadings of the most dangerous pollutants. Then EPA must develop phased reductions in these loads according to an ambitious timetable.

The path is charted clearly enough to begin. The real question is whether our Government has the commitment to the Agreement and the political will to take a few steps down it.

Thank you very much. [Applause.]

Senator LEVIN. Thank you.

Mr. Briggs, thank you also for coming by on behalf of the Michigan United Conservation Clubs.

TESTIMONY OF WENDELL BRIGGS, PRESIDENT, MICHIGAN UNITED CONSERVATION CLUBS

Mr. BRIGGS. Thank you, Mr. Chairman. It is a pleasure to be here.

My name is Wendell Briggs, and I reside at 3747 Hordyk, Northeast, Grand Rapids, Michigan. I speak to you this afternoon both as a long-time Great Lakes advocate and more importantly, as the President of the Michigan United Conservation Clubs.

MUCC is the largest nonprofit, statewide federation of conservation and sportsmen's organizations in the Nation. MUCC is composed of 418 affiliated clubs representing 130,000 members. We are dedicated to furthering the cause of the environment and conservation and to promoting programs designed to educate citizens in natural resource conservation and environmental protection and enhancement. We are also the Michigan affiliate of the National Wildlife Federation. It is with great pleasure that I address you today.

As many of you are aware, MUCC has long stood for a clean, healthy environment. Be it through our legislative activities and advocacy or our educational programs, natural resource conservation forms the foundation upon which MUCC rests. MUCC has fought long and hard for tough water quality standards through the years and will continue to do so.

Keeping in line with that water quality theme, I would like to address a situation that we have a great interest in, the contamination of Saginaw Bay.

As an organization, we have roughly 120 clubs in the 22-county Saginaw Bay drainage basin. I suppose it is no surprise to anyone in this room that MUCC is deeply concerned about the overall decline in our Saginaw Bay resources. Our membership routinely utilizes the Bay environs for recreational pursuits such as fishing, hunting, trapping, bird-watching, boating, and total body contact recreation. Unfortunately, many of these uses have been impaired by our past and present waste disposal practices.

Saginaw Bay is undergoing a renaissance second-to-none with its world-famous walleye fishery. This resource will bring in thousands of tourists each year as people begin to flock to this new fishing hole on the east side of the State.

Just as an example of the quality fishery developing in the area, we have put together a few statistics. During the open-water fishery of 1988, April through September, Saginaw Bay anglers devoted 2.5 million hours of fishing effort in the pursuit of sport fish, which translates into 672,000 individual fishing trips.

The contribution Saginaw Bay plays in the overall Lake Huron fishery is well-documented. During 1988, the Saginaw Bay sport catch accounted for 65 percent of all of the species taken from Lake Huron. Specifically, 78 percent of the yellow perch and 73 percent of the walleye taken from Lake Huron were obtained from the Saginaw Bay area. In addition, the commercial harvest of whitefish in Saginaw Bay reached 41 percent of the total commercial Lake Huron catch in 1988. Finally, 99 percent of the Lake Huron commercial harvest of perch, catfish, carp, suckers and sheepshead were taken from the waters of Saginaw Bay. It is a shame that the experience is tainted with the label of Saginaw Bay being one of the top 14 contaminated sites in Michigan.

Unfortunately, it is common knowledge that Saginaw Bay lies in a comatose state after years of neglect and abuse. Only recently have we been able to unlock the mysteries of the Bay's pollution problems and review the sources of contamination. And while many research hours have been spent studying the sediments and water quality of this environment, we feel the time for study may well be behind us, and the time to get on with the cleanup strategy is before us.

However, this task will be most difficult as both new and old pollution threats continue to haunt our efforts. Like a ghost that will not go away, PCB's, PBB's and dioxins continue to pour into the Saginaw Bay at alarming rates. Add to that the hundreds of point and nonpoint source discharges that line the bay environment, and it all spells disaster.

We have seen signs of contamination for years—fish kills, wildlife born with birth defects, noxious algae blooms, and so on. Likewise, the new public health fish consumption warnings tell us that the toxic contamination is a very real threat. These warnings are currently in effect for most fish species found in the bay and are the result of elevated levels of toxic substances in fish tissue. As I just mentioned, the research that has been conducted to date has documented the situation well.

The question we have is: Where do we go from here?

To answer that question, we have to look at both sides of the story. On one hand, there are those who claim that all we have to do is dredge the contaminated sediment, store it someplace safe, and move merrily along. Of course, such a quick fix is not in anyone's best interest. Most of the CDF's in the area are full or are leaking contaminants, anyway.

Others contend that toxic contributions must be reduced or eliminated on both the local and regional levels in order to compensate for past damages while striving for technological advances adequate enough to deal effectively with the toxics situation.

This brings us to the issue of Basin-wide water quality standards, as suggested by the Great Lakes Water Quality Agreement, versus the typical State standards currently in use. As far as MUCC is concerned, we are fully supportive of Basin-wide water quality standards which not only protect but enhance our precious water resources.

Recently, Wisconsin's water quality rules were submitted to EPA for review. While the EPA does review these rules, we wonder what effort is being made in order to comply with the Great Lakes Water Quality Agreement seeing as how dilution was considered a suitable treatment method. Fortunately, the National Wildlife Federation staff has tracked this procedure and has kept other Great Lakes State environmental groups informed.

We also believe cumulative toxic impacts must be made a priority in order to do a thorough job of addressing toxic inputs to the Great Lakes. Mass balance loadings must be studied in order to gain some understanding of exactly what impacts we expect from toxic discharges to our water environments.

In addition, we must rise above our archaic thinking and dispose of the notion that "the solution to pollution is dilution." Just this past year, the Michigan Department of Natural Resources worked diligently with the City of Grand Rapids to bring to a halt the massive combined sewer overflow problems that plagued the city for so many years. I am happy to say that MUCC was directly involved in this permit activity. But while that story had a happy ending, the nonpoint sources are choking the life out of the rest of the Great

Lakes, Saginaw Bay included. It is in this nonpoint area that we believe demonstration projects are sorely needed.

Perhaps the bottom line is that alternative or radical approaches are needed to adequately protect our environment. We no longer have faith in "zero discharge" and "virtual elimination of toxic substances into the lakes" as was referenced in the Great Lakes Water Quality Agreement. We have waited with the rest of the environmental community for the Federal Government to implement these principles. While we have been waiting, the contamination of Saginaw Bay has worsened.

In conclusion, Mr. Chairman, we hope the future holds in it a meaningful commitment by the Federal Government to adequately control or halt the influx of toxic substances to our Great Lakes Whether that take the form of a "toxic freeze" or other suitable path, it does not matter. The bottom line is that we have reached the point of no return, and the people of Michigan are tired of wondering if their water is safe to drink and their fish safe to eat.

Thank you for allowing us to testify at this hearing.

I might say that I live in the local area, and my water is not safe to drink.

Senator LEVIN. To you, Mr. Briggs, and the MUCC, we are grateful for your testimony, and we will have some questions in a few minutes.

Ms. Schaftlein.

TESTIMONY OF SHARI SCHAFTLEIN, STAFF WATER QUALITY SCIENTIST, WEST MICHIGAN ENVIRONMENTAL ACTION COUNCIL [1]

Ms. SCHAFTLEIN. Hello. My name is Shari Schaftlein. I am the Staff Water Quality Scientist for the West Michigan Environmental Action Council, a citizen membership organization located here in Grand Rapids—and I will use a phrase borrowed from a local rock radio station—the city where sewage can be seen floating on the river 24 hours a day, thanks to our nifty new bridge lights.

Senator Levin, I would like to give you this bumper sticker as a souvenir of your visit to Grand Rapids, and I would like the rest of the audience to see it as well. I give this to you not to be disrespectful, but to impress upon you how mainstream this issue has become in our area.

The combined sewer overflow problem, referred to as CSO, is the most widely-recognized surface water quality issue in this area and serves as a reference point for talking about other surface water quality issues, which I will continue doing in just a moment.

First, I would like to share with you the point of view from which my comments are derived. WMEAC's professional staff of four tries to track a wide variety of environmental issues on the State, regional, national and international levels. Our staff has taken part in Great Lakes Week in Washington, and numerous basin-wide conferences for environmental groups. Our staff and volunteers determine what local actions can be taken to promote environmental protection.

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[1] See p. 188 for Ms. Schaftlein's prepared statement.

The majority of our efforts involve hands-on, grassroots, environmental education and advocacy. A few of the issues we work on include community right-to-know, development of alternatives to dangerous pesticides, watch-dogging wastewater discharge permits, expanding recycling systems, promoting tree-planting ordinances, operating the only privately-funded used oil recycling program in the United States, and lobbying for sand dune protection, which most of our staff is in Lansing doing today.

We take advantage of all opportunities to tie a local issue into the big picture—that is, cross-media management, watershed and Basin-wide management, and "Spaceship Earth" concepts. I am sorry to report that we do most of our work without mentioning or being influenced by anything that the EPA Region V Office or the Great Lakes National Program Office is doing. The visibility that the EPA has with the public in West Michigan is low.

This lack of visibility is due either to lack of substantive work or a public relations problem. In my opinion, EPA has described a vision of what we may do, or could do, to maintain and enhance the Great Lakes, but has not followed through with enough action steps. They have played the role of the shy cheerleader.

When I need to brush up on my ecosystem management concepts, I read the Great Lakes Water Quality Agreement, and the Five-Year Program Strategy for GLNPO; then I review the citizen action guides that Great Lakes advocacy groups such as National Wildlife Federation, Lake Michigan Federation, Sierra Club and Great Lakes United have prepared. These guides contain the substantive action steps needed to accomplish the vision EPA has come up with.

What I have not seen is a progress report from Region V that has the following information: Here is what we are supposed to do; here is what we did; here are the impediments to basin management, and here is what we are doing to remove the impediments.

This is the type of information that is going to be useful to activists at the local level.

If there is a public relations problem, and EPA claims they are doing plenty of substantive work, then we must clarify what substantive work is. I need to know whether the regional staff is taking action on a daily basis to reduce permitted discharges to the air and water in the Basin.

The "bean counting" reports that occasionally make the AP wire tell us that "x" number of wastewater permits were issued, and that "x" number were in compliance. At the same time the headlines say "Six hundred miles of stream fouled, DNR". That is a small amount given the total number of streams in Michigan, but that is a large amount considering those all flow through populated areas.

I cannot imagine that the Great Lakes are being adequately protected if in 1986, the DNR had 10,000 air permits backlogged, and a 13-year backlog in groundwater permits. Furthermore, we see EPA being very shy in its role of insuring that Great Lakes States are doing an adequate job in implementing Federal acts like FIFRA and RCRA. Our State is struggling to address the incinerator ash issue, and EPA has been silent.

I am sure EPA considers its statistical summaries of ambient Great Lakes data and breakthroughs in ecosystem modelling as substantive work, but for my Great Lakes advocacy efforts, EPA needs to package that into a form that will stir some emotion and support for EPA programs. I think their visibility is likely to increase if we begin progress on the Lake Michigan Lakewide Management Plan.

I would like to move now into some specific matters relating to the perceived health of Lake Michigan, the Remedial Action Plans for White Lake, Muskegon Lake and the Kalamazoo River, and uniform water quality standards.

To a certain extent, the CSO problem has been a blessing in disguise. There is now widespread recognition that sewage overflows flow downstream to Grand Haven and out into Lake Michigan. It has furthered dawned on the community that we drink Lake Michigan water and that the near shore currents can spread the dirty river water along the beaches that we recreate on.

People have a clear mental image of a dirty river flowing into the big lake. When you multiply what is flowing out of our river with that of the other major rivers along the lake and combine the input of air toxics falling out on the lake, one can begin to understand that Lake Michigan is accumulating pollution. The results of this pollution, which several people have already mentioned, make sense to us now.

Without getting into specific chemicals and specific sites, the apparent trend in the reports that come across my desk is that the more we look the more we find.

During the CSO debate last year, the EPA's name came up frequently. The DNR claimed they had no direction from EPA to address CSO's. The DNR focus was only on daily discharges from municipal treatment plants. The city claimed that Federal funding had not been available to retrofit the combined sewer system. The CSO issue is now the benchmark for comparison. It is tough for West Michigan to take a lead role in supporting the Great Lakes Water Quality Agreement when we haven't cleaned up obvious pollution sources in our back yard. The EPA's visibility on this issue has been nil. There are only a few references to CSO's in the Agreement and in GLNPO's Five-Year Program Strategy.

The current strategy suggests that in fiscal year 1989, GLNPO will assess CSO's and work with EPA water program to initiate appropriate regulatory actions. I hope this effort occurs in a timely manner and the results are shared with communities such as ours that are in the midst of preparing a long-term control strategy for CSO's.

Of concern in the Agreement is the phosphorous loading to Lake Michigan from CSO's and persistent toxic substances which are being discharged during CSO events as well. Grand Rapids is the first Michigan city to develop a long-term control strategy under the DNR's new-found commitment to address CSO discharges. I expect that the GLNPO staff will seriously evaluate whether Michigan's regulatory approach meets the Great Lakes Water Quality Agreement objectives.

Regarding the Areas of Concern, if White Lake, Muskegon Lake and the Kalamazoo River are Areas of Concern, and the Grand

River has CSO problems, you can bet that the West Michigan tourism industry is banking on the fact that we are getting clean dilution water from somewhere to offset the pollution problems.

I attended and provided oral and written comments on each of these Areas of Concern during the summer of 1987—summer and fall. Comments were provided on first and second drafts. Since that time, I have had no contact with EPA or the DNR on the status of these RAPs. There have been no public meetings or notices. I do not know if my comments were included in the final drafts. I have received no feedback from any interested citizens who have seen the final RAPs. That might be one reason why they are in, because no one was able to comment on them.

I will share a few of my comments that I prepared for the Muskegon RAP to exemplify some of my concerns with the RAPs. The executive summary of the second draft pointed out that Muskegon Lake has no adverse impact on Lake Michigan. It goes on to point out four localized problem areas and recommendations for fish testing data to be used to update the fish consumption advisory. The last line of the summary states, "Remedial actions will be developed and prioritized based on the outcome of these investigations and further public review." Given that, I suggested that the DNR let us know when this was going to happen, and we have received no information on that.

I also strongly suggested that some form of matrix be developed so that citizens can track progress, assign responsibility and thus hold governments and watershed communities accountable. Periodically, the DNR and EPA could walk through the matrix with interested parties to track the progress.

The Area of Concern reports are huge and packed with data and recommendations. The ones I have reviewed were short on realistic action steps, funding options, time frames for cleanup, and local government actions that could be taken. The tone of the Muskegon Lake RAP to a large extent suggests that citizens and local governments can sit back and let DNR and EPA handle the problem.

Areas of Concern in West Michigan are in small towns, or spread along a river system. It is unusual for citizens in these situations to develop a sophisticated support system for a RAP. If you want the RAP process to be accelerated, then you need to provide some financial support for citizen groups.

At a few sites across the Basin, EPA is supporting citizen groups. At these sites, progress is being made in implementing the RAP's. It does not appear that White Lake and Muskegon Lake are getting any special attention by virtue of being an Area of Concern. Yet the community perception is if we are an Area of Concern, someone must be taking care of us. If internally the EPA has ranked the Areas of Concern in terms of impacts and importance, then you need to let the Area of Concern communities know so that their expectations can be adjusted.

Regarding uniform water quality standards, we have been participating in DNR's triennial review of Michigan's water quality standards. Two key issues are obviously the toxic standards and the mixing zones for discharges into the Great Lakes.

It only make sense to us that each State have uniform water quality standards. I expect EPA to provide a review of similarities and differences between discharge standards in each of the Great Lakes States and be vocal about the results. If the Governors are willing to sign off on a Toxic Substance Control Agreement, work together on a Great Lakes Protection Fund, and agree to uniform fish advisories, then there must be agreement to uniformly adopt the most restrictive standard for dischargers in the Great Lakes Basin, as determined by current scientific literature.

WMEAC's support for the revised standards will be contingent on this point. If we are preaching ecosystem management, we must demonstrate it. The DNR and EPA depend on the environmental groups to support the water quality standards revisions. The standards are finalized by the consensus of EPA, DNR and interest groups, in a somewhat scientific, apolitical atmosphere. The DNR then looks to environmental groups to support the standards in order to get statewide support and ensure passage of the standards by the State Legislature's Joint Committee on Administrative Rules, a nonscientific, totally political body.

I would like to use as an advocacy tool a quote from EPA that says something like, "These revised water quality standards represent state-of-the-art control for persistent toxic substances in the Great Lakes and move us much closer to our goals as identified in the Great Lakes Water Quality Agreement."

I hope to have enough assurances to say, "With the adoption of these standards, fish advisories will be lifted in your lifetime, and reproductive failures for Great Lakes fish-eating birds and mammals will be significantly reduced," and further, that these indicators will suggest that humans are better off as well.

Senator Levin, the responsibilities the EPA has are enormous. As a result of the amendments to the Great Lakes Water Quality Agreement, the length of GLNPO's Five-Year Strategy has doubled. Their funding has not. Support is needed from EPA in Washington and the Office of Management and Budget. EPA needs the funding and the authority to do what is required of them under the Agreement.

If adequate funding is not available, we need to immediately adopt bold, fundamental changes in environmental policy so that existing and costly regulatory approaches can be scrapped.

Fundamental changes include mandatory composting toilets, mandatory recycling, banning industrial processes that generate hazardous waste, and only allowing integrated pest management and organic farming practices.

I would ask you: Which path do we take?

In closing, EPA currently does not have the legislative tools to accomplish the air toxics portion of the Great Lakes Water Quality Agreement. Your active support for a reauthorized Clean Air Act, one that includes restrictions on air toxics, will go far in demonstrating your commitment to Great Lakes protection.

Thank you for the opportunity to testify.

Senator LEVIN. Thank you, Ms. Schaftlein. I appreciate it.

Mr. Davis.

TESTIMONY OF CAMERON DAVIS, PROGRAM ASSOCIATE, LAKE MICHIGAN FEDERATION[1]

Mr. **Davis**. Thank you, Mr. Chairman.

My name is Cameron Davis, and I am a Program Associate with the Lake Michigan Federation.

The Federation is the only citizens', nonprofit environmental group dedicated solely to the rehabilitation of Lake Michigan water quality and the water quality of its tributaries and surrounding environment.

The Federation was formed in 1970 and is the only environmental group that has been actively involved in every area of concern on Lake Michigan. On that note, I do want to go through our commentaries on Annex 2 and how the EPA has lived up to Annex 2 of the Great Lakes Water Quality Agreement concerning Remedial Action Plans or RAP's, as we call them.

Progress in the Areas of Concern in general has been disappointing. Of the 7 of 10 Remedial Action Plans that have been released, most adequately define problems, but flatly fail their ultimately purpose—to evaluate current remedial programs and to evaluate as well as propose additional remedial programs.

Where the U.S. EPA Great Lakes National Program Office, or GLNPO, has provided technical support and funding to the States in developing RAP's that has resulted in improvements in many State documents.

GLNPO, however, has rarely insisted that remedial action evaluations and recommendations be as thorough and extensive as possible. For example, most RAP's recommend additional testing, sampling, or studies. While in many circumstances, these may be necessary, they are not remedial actions. They are steps toward remedial actions. In addition, while it should be strongly noted that the States have the lead role in conducting public outreach programs, GLNPO can take a much more aggressive line in insisting on extensive and balanced public participation in the RAP process. Because GLNPO provides grant money to the States for RAP development, we believe GLNPO can use this "carrot" more effectively to set, oversee and enforce important requirements—for example, that Citizen Advisory Committees, or CAC's, should be comprised of citizens with a wide variety of interests including environmental interests, industrial interests, recreational and so on—and should be involved in planning and development of the RAP's from the earliest stages. That, I think, is the key.

GLNPO might also require status reports from the States on public participation in RAP development according to the Great Lakes Water Quality Agreement. Too often, particularly in Michigan, the interested public has merely been handed a completed RAP and asked to react. That in our opinion is not public participation.

Two RAP's have stood out, however, one of which is in Michigan. First, though, Green Bay has stood out for its extensive citizen input and far-reaching recommendations—about 135 of them—without preconceived political inhibitions, at least on the Statewide level. Implementation is proving difficult, however, due to structural problems and confusion over mandate. GLNPO has played a strong role in the Green Bay RAP development and a mass balance study there. GLNPO should, however, also be involved in RAP implementation and public participation and should not be limited to mere funding and technical assistance.

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[1] See p. 193 for Mr. Davis' prepared statement.

The RAP in Michigan that I mentioned just a moment ago that in our view has taken some strong steps is the Kalamazoo River RAP. It stands out because it does pose and evaluate potential remedial actions such as dredging, biodegradation and others. Much if not all of the Kalamazoo River RAP's relative success is due to strong personal commitment by individual staff members in the Michigan DNR and an aggressive and concerned citizenry.

The most dismal failure by the EPA and a State involved in any Lake Michigan RAP has been at Waukegan Harbor, Illinois, a Superfund site known in environmental circles to be "the worst PCB mess in the country." I will have to disagree at this point with the Regional Administrator's statement that the consent decree that was recently entered into covers all of the harbor. It does not.

In the fall of 1988, the EPA signed the consent decree with the principal polluter, Outboard Marine Corporation and has stated through the Illinois EPA that when and only when cleanup pursuant to that consent decree is complete will a RAP be considered. Few other positions by the EPA and a State could violate the Great Lakes Water Quality Agreement as flatly as this one. This position violates the letter and the spirit of the Agreement in a number of ways.

Number one, the EPA and the State must ensure that RAP's are developed for each Area of Concern. Again, both the U.S. EPA and the State have stated that they may not in fact develop a RAP for Waukegan, depending on the cleanup and the consent decree.

Number two, the public has not been consulted on EPA's decision to that effect. Clearly the public has to be consulted, according to Annex 2.

Third, a consent decree in no way satisfies RAP requirements in that it fails as a long-term comprehensive water quality maintenance plan that should supplement public stewardship of a water body's water quality.

The consent decree is good in that, as Regional Administrator Adamkus has said, there has been a 10 year or so stall on Waukegan. The consent decree is thus a step. However, it flatly fails again, because it fails to include contaminants in other parts of the harbor where sediment contamination is prevalent.

For example, the consent decree fails because the public has not been included, and while enforcement such as this, that is to be expected, it is just another indictor of how the consent decree does not meet the dictates of Annex 2.

In addition, the EPA's cleanup threshold is inappropriately placed at 50 parts per million for PCB's.

The Lake Michigan Federation stands behind the U.S. Fish and Wildlife Service's threshold for PCB's, which is significantly lower. The 50 part per million PCB threshold does not ensure protection against bio-accumulation and does not protect fish and wildlife.

In short, the EPA's and the Illinois EPA's position that a RAP should not be developed, if at all, until after cleanup pursuant to the consent decree is complete—the position itself violates the Agreement.

We have indicated to the Illinois EPA and the U.S. EPA that we will seek funding to pursue what we call a Citizens Advisory Committee [CAC] for the Waukegan Harbor Area of Concern. This, I can expand upon if you would like. It would go a long way to help the U.S. EPA toward complying with Annex 2 in that regard.

I have submitted for our written testimony a brief synopsis of updates on the Remedial Action Plans for the 10 Lake Michigan areas of concern.

There has also been a lot of discussion here today on the Lakewide Management Plans. That is also part of Annex 2. We believe the EPA can take a number of steps now to avoid similar difficulties that have been seen in the RAP process.

EPA staff today mentioned that there was a workshop yesterday and the day before on the Lakewide Management Plans. That is a good first step. It is a year and a half late, admittedly, but it is a good first step.

Another suggestion is funding a Citizens Advisory Committee for taking the Lakewide Management Plans to the public to help write the LMP's, to help ensure its implementation for Lake Michigan and to help educate the public on the Lake Michigan Strategy—a prelude, supposedly, to the Lakewide Management Plan.

In addition, a CAC would be vital to evaluate current remedial measures and recommending additional steps needed to clean up Lake Michigan, since it would be impossible for the EPA and the States to evaluate their own regulatory programs free from bias.

Members of the CAC should from the outset be appointed by the Director of the Great Lakes National Program Office, and members should include representatives from various interests as well. It is also vital that the CAC members have full authority with the EPA staff to revise, to write and to seek implementations of these Lakewide Management Plans.

Second, guidelines for CAC participation should be clearly and unequivocally voiced to call for each member's firm commitment to setting Lakewide Management Plan goals first and then implementing these goals with all due diligence once they have been established.

Third, Lakewide Management Plans should pro-actively identify critical pollutants. One of the problems that we foresee with the Lakewide Management Plans at this point is that they seek to deal with what are called critical pollutants, or those pollutants which we know are in the lakes right now and we know are causing problems. One of the things that is vitally needed at this point is for Lakewide Management Plans to make an effort to seek what other potential critical pollutants might enter into the system.

Moving onto Annex 13, pollution from nonpoint sources——

Senator **Levin**. Mr. Davis, let me interrupt you for just 1 minute. I am going to have to take a 5-minute recess. We will be back in just a few minutes.

[Short recess.]

Senator **Levin**. Thank you, Mr. Davis.

Mr. Davis. Thank you, Mr. Chairman.

Annex 13 allows the EPA to identify, preserve and rehabilitate wetlands where necessary. Since wetland issues cut across many disciplines, GLNPO, charged with taking an ecosystem approach toward Great Lakes water quality rehabilitation, is in the best position to carry out many of Annex 13's wetland provisions. Currently, the Water Division carries out almost all wetland activities because it has the regulatory authority to do so.

GLNPO has, to its credit, helped to initiate a Great Lakes Wetland Protection Strategy with Regions II, III, and V, and within recent months has, in initiating this, limited staff time to this project to about 10 to 25 percent of one person's staff time. Here, GLNPO's involvement, although severely limited, is not due to any lack of commitment or concern, but rather, low funding.

Annex 14, with respect to contaminated sediments. Studies have found three to six times more malformed embryos than usual of some aquatic birds around Green Bay and Saginaw Bay. The birds have a diet consisting primarily of contaminated fish, and the diet is mostly responsible for the abnormalities. In addition, some Great Lakes ducks have 60 times more levels of PCB contamination than poultry sold in grocery stores.

While part of the problem may also be attributed to air toxics, the problem concerns the Nation in general became a large portion of the duck population passes through the Great Lakes during the migratory seasons.

The EPA has taken a number of steps to comply with Annex 14. For one, GLNPO staff has served on an International Joint Commission Sediment Subcommittee and helped author an assessment and options for remediation of the contaminated sediment problem.

Second, coordination of an innovative multi-divisional Sediment Task Force to work on criteria development for sediment has also been an activity in which GLNPO has participated.

Third, GLNPO's Sediment Demonstration Project, authorized by Congress in Section 118 of the Clean Water Act, after a slow start, is now getting underway. The project, after a slow organizational start, is on its way, and while we understand that there has been some Congressional concern over delays in actual demonstration project implementation, some essential risk assessment is necessary first and is most effectively conducted in Sheboygan Harbor and/or Buffalo. We feel it is important to defer to scientific judgment on this matter and understand that at least one proposal has been submitted to do what is called a "turnkey test" of one or more technologies at one either Indiana Harbor Canal or the Saginaw Bay area, which could be an important first step.

GLNPO has also strongly supported public participation in the sediment program. In addition, some disputes over the amount of GLNPO money to be spent on the sediment program have arisen. We believe, and have been supported by a colloquy on the House floor to this effect, that 40 percent of new money given to GLNPO, and not 40 percent of the entire operating budget, is appropriate for sediment program funding. Forcing GLNPO to spend 40 percent of its overall budget would only be to the detriment of other Great Lakes water quality programs.

Finally, Annex 15 in regard to airborne toxic substances. It has been mentioned here today, and we would like to repeat the fact that the atmosphere is in many respects the largest pathway to the lake for toxics. To illustrate that, 99.5 percent of Lake Michigan's lead, 59 percent of its PCB's, and 86 percent of its benzo(a)pyrene come from the atmosphere. Benzo(a)pyrene is, of course, a product of incomplete combustion that can result in cancer.

However, monitoring for only two organic compounds and a few heavy metals of the hundreds of toxics listed in Appendices 1 and 2 and Annex 2 of the Great Lakes Water Quality Agreement is being conducted. The most extensive monitoring program, the Great Lakes Atmospheric Deposition Network, monitors only for some metals, criteria pollutants, and a few others. In addition, efforts to comply with perhaps the most important provision of Annex 15 are severely limited. Annex 15B calls on the EPA to understand the effects of persistent toxic substances on the health of humans and the quality and health of aquatic life where a significant source of these substances is the atmosphere.

Initiatives to comply with these important Annex 15 provisions rest with the Administrator via GLNPO input to more aggressively seek funding as per Section 118 of the Clean Water Act, and for Congress to recognize the insidious threat that toxic air fallout presents to the Great Lakes and their residents.

On behalf of the Lake Michigan Federation's 1,500 members, thank you for this opportunity to comment and for your concern for the important bi-national investment known as the Great Lakes.

Senator LEVIN. Thank you, Mr. Davis. Let me start with you. You have emphasized a number of times in your testimony the importance of citizen participation in drafting the Lake Michigan Plan and advising EPA. The Great Lakes Water Quality Agreement calls for citizen participation to develop the lakewide plans. Do you have any specific recommendations for me, my colleagues and Congress relative to the establishment of citizen advisory groups?

Mr. DAVIS. Yes, Mr. Chairman, I do. One thing that I am particularly afraid of seeing is some of the mistakes that were made in the RAP process repeated with Lakewide Management Plan process. One of the things that I have called for in this testimony is for the Director of the Great Lakes National Program Office to appoint a citizens' advisory committee with members who can be involved from head to toe in this planning process.

One of the things I think your Committee or Subcommittee might do that would be helpful would be to write a letter to Carol Finch, the Director, and in that letter, recognize the vital importance of citizens and having citizens on a citizens' advisory committee that will be involved from writing to implementing these plans.

As I have stated, there has been a workshop completed in the last 2 days, and this is just the beginning. We would like to see appointment of various members to some type of citizens' advisory committee within the next 2 months.

Senator LEVIN. Given the provision in the Agreement between ourselves and Canada relative to community or citizen participation, we would be happy to write that letter. We may have to go beyond that possibly. We are considering a legislative package here, and it is possible we could put some requirement for citizen participation into that. But I doubt that it would be necessary. My hunch is that EPA would probably administratively do that if they were requested. But if not, we ought to at least consider legislation as well.

Mr. DAVIS. If that is the case, if I might be allowed to comment, the wording of the Agreement is that the EPA and the States "shall ensure that the public is consulted." I think stronger wording than that is preferable.

Senator LEVIN. All right. We would be happy to work with you on that and send that suggestion to EPA.

Mr. DAVIS. Thank you, Mr. Chairman.

Senator LEVIN. You have not given up on this process. It seems to me your testimony is basically saying you are frustrated with it and you want it improved, but you have not given up on it. Is that a fair summation?

Mr. DAVIS. Mr. Chairman, the only way to get these RAP's implemented properly is through public participation.

Senator LEVIN. Is it too late to correct or improve the public participation in the RAP process?

Mr. DAVIS. I don't think so. As you have stated and throughout the testimony, many of these RAP's have not even gone to the International Joint Commission yet, so we are just beginning here.

Senator LEVIN. How can the Congress help in improving citizen participation in the RAP process? Would it be the same kind of suggestion to EPA that you made reference to before for the Lakewide Management Plan?

Mr. DAVIS. I think that is a good way to start. Again, the States take the lead in public outreach. But I think it is very apparent at this point that the States are not going to take much of a lead without some concrete oversight by the EPA.

Senator LEVIN. And they could recommend to the States that a certain level of citizen participation be included in the RAP process.

Mr. DAVIS. Correct. There has got to be some accountability and there really isn't as far as public participation goes.

Senator LEVIN. Do you know of any action by the EPA in that area relative to recommendations, suggestions or guidelines to the States for citizen participation in the RAP process?

Mr. DAVIS. Yes. I would think that a letter somewhat to the effect of the Lakewide Management Plan suggestion is a good start. In addition, I would clearly be happy to work with the Great Lakes National Program Office to work on a set of public participation guidelines for each area of concern.

Senator LEVIN. One last question of you has to do with the Waukegan Harbor issue. You testified that it is your understanding that the RAP will still be required after the consent decree is completed, by terms of the consent decree—is that what you said?

Mr. DAVIS. No. The consent decree really makes no mention of an International Joint Commission Remedial Action Plan.

Senator LEVIN. OK. But you believe it is still appropriate because the harbor and the substances are only partially covered by the consent decree.

Mr. DAVIS. That is absolutely correct.

Senator LEVIN. OK. We will get back to EPA on that issue. I think there may be a misunderstanding or a difference on that one. Mr. Adamkus' testimony was different from that, and he is still here, so he will know that we will get back with him on that issue.

Ms. Schaftlein, let me ask you a few questions about air toxics. There has been testimony this morning as to the impact of air pollution relative to the percentage of toxins on the Great Lakes. Can you tell us in your opinion how well the Great Lakes Air Deposition Network, the GLAD network, has functioned so far in helping us understand the problem of how air pollution contributes to the water pollution in the Great Lakes?

Ms. SCHAFTLEIN. I can tell you that we have not had any reports come across my desk on what the GLAD data looks like and packaged in a form that we can take it to the public. What we are going on is some reports that have been in some Sierra Club air toxic reports and media reports on the impact of the air toxics on the Great Lakes. There is not enough coming across my desk to indicate——

Senator LEVIN. Is that because it does not exist, or it is not in a form that you can use, or it doesn't come quickly enough for you to use?

Ms. SCHAFTLEIN. It does not come to my desk in a way that we can use it, given——

Senator LEVIN. Is it available?

Ms. SCHAFTLEIN. We are overwhelmed. The point I was trying to make is that we are out in the trenches on a daily basis working on pollution prevention with the public. The EPA GLAD data and sampling program has got to be put in a form, a usable form, for groups like ours that are out there dealing with the public to try to get support and understanding of the air toxic issue.

Senator LEVIN. Has that request been made to the EPA to put it in that form?

Ms. SCHAFTLEIN. No.

Senator LEVIN. Could you send us a copy of it, of the request?

Ms. SCHAFTLEIN. Yes, I will make that request.

Senator LEVIN. OK. Is there anything relative to the operation of the GLAD network that should be made part of law, in your opinion?

Ms. SCHAFTLEIN. I would have to defer on that.

Senator LEVIN. OK. If you or anyone else have suggestions in that area—or any other area, by the way—after we are done, feel free to let us know.

Ms. SCHAFTLEIN. Cam would like to offer some comments on that.

Senator LEVIN. All right.

Mr. DAVIS. If I could, it is my personal feeling that there really is not enough monitoring on some of the persistents involved, and perhaps specific language, specifically recommending that monitoring for some of the critical pollutants take place, I think that would be particularly helpful.

Senator LEVIN. All right. Now, a lot of this can be done administratively, the EPA agrees. So let's get the request to the EPA first, administratively, before we consider legislative requirements—but nonetheless, it is always a possibility.

Mr. Briggs, I would be interested in your comment as to what changes, if any, in law should be made relative to the RAPs. You were here earlier this morning, and I think you heard that one possibility, for instance, would be to put some targets, deadlines, milestones, in law. You would not put a criminal penalty in there, but you would put at least some legal pull behind some of these deadlines, which just keep passing and getting re-established. What do you think of it?

Mr. BRIGGS. I think it is a must. We here in this immediate area had the experience with the combined sewer overflow that the City of Grand Rapids permit was coming up, and they wanted to work on a plan for 5 years. We told them that that was twice as long as it should be. We leaned on the DNR to cut the plan in half and actually asked them for a moratorium on taking on any more sewage in the City of Grand Rapids until some remedial action was accomplished.

We heard this for years. Myself, living in the area, I had heard this for years, and becoming the new President of MUCC, I thought if I can't take care of a situation like this in my own back yard, it is pretty tough to move around a State and get the same thing done. Our purpose is to clean up our waters in the State of Michigan. And with the help of the DNR, we did set some timetables, and the City of Grand Rapids has been able to carry out their timetables, and they are doing the job. However, if these RAPs are allowed to just be talked about and acted on in a period of time, it won't even be in my lifetime before the plan is complete, let alone any work is done.

Senator LEVIN. I think you also heard the testimony of Mr. Rector relative to timetables—the lack of optimism that he holds for getting EPA to get the States to adopt a single set of water quality rules. I asked him did he think that would happen by 1992, and he said no; by 1995, and he said no; and then I asked him ever, and he said no, and then qualified the "ever" a bit.

Are you as pessimistic?

Mr. BRIGGS. Working with the Department, I guess I would have to agree with Del, because I think that probably that plan should be a little more flexible to get it to work. I don't think that we can have a standard for everyone and every item.

Again, working with the Department, we know that their hands are tied quite often because of money. You heard that the State of Michigan passed a bond issue for cleanup, and of course, we were planning on some of that bond money to work with a revolving fund of EPA, and now we find out that that revolving fund has been cut. And when we were working on our combined sewer overflows here, with the Department of Natural Resources, they told us that it is pretty tough to make these cities do anything if they do not have the money.

The City of Grand Rapids, of course, their problems are from the outlying area, not necessarily right in town, but we have asked for the same standards throughout the State as we imposed on the City of Grand Rapids, and of course, a lot of the communities do not have the wherewithal to come up with that funding. We have some rivers on the east side of the State, the Rouge in particular, that have some real problems, but we feel that if we can start with the combined sewer overflows to get some of that done, why, possibly we can clean up some of the rest.

But we object to getting rid of the pollution by dilution.

Senator LEVIN. On that issue of a single set of water quality rules, I take it you would agree that the rules should be more uniform. Is that fair?

Mr. BRIGGS. Well, yes.

Senator LEVIN. You don't believe they can be perfectly uniform, but you believe they can be significantly more uniform than they are now.

Mr. BRIGGS. Absolutely.

Senator LEVIN. OK. Are you optimistic that we could get the Great Lakes States to adopt a set of reasonably uniform rules in the next 5 or 7 years?

Mr. BRIGGS. Well, listening to testimony this morning on what Wisconsin is doing versus what Michigan is doing, I think that we need some teeth someplace to get Wisconsin off dead center. If they continue to peck away one at a time, and a number of years for each one, it is just going to be impossible.

Senator LEVIN. OK. Thank you, Mr. Briggs.

Mr. Van Putten, on the uniformity issue, how pessimistic are you that "reasonably uniform" rules—I won't use the word "uniform" anymore—could be either imposed or voluntarily adopted by the Great Lakes States within the next 5 years?

Mr. Van Putten. I think it is highly unlikely.

Senator LEVIN. What, if anything, can be realistically done to make it more likely?

Mr. Van Putten. Well, I think it can occur; I think it is unlikely it will occur, and I think the solution is probably not more legislation and more statutory deadlines. EPA has amply demonstrated its ability to miss statutory deadlines as well as any other sort. I think, frankly, the answer in terms of motivating the agency and the States to do what they already have the authority to do is in continuous and vigorous oversight like this. When a committee like yours begins looking into an area, we immediately see a spurt of action.

Do you think it is all chance that there was a workshop last week, and there was this meeting of the "Glee Club" on the uniform water quality standards yesterday? I have seen more activity in the last 2 months then since the Agreement was amended in 1987. I am very frank about that.

So I think that, with respect to your general question, there has been a theme today about statutory deadlines; I think continuous and vigorous Congressional oversight is likely to be as effective and less difficult to bring off.

Senator LEVIN. One of the purposes of putting some target dates in statute is that it puts pressure on us in Congress. We are putting pressure on ourselves, and it is like marking our own calendars in order to get us to do the oversight which is necessary. We have got tremendous needs for oversight in lots of areas of Government. It is part of the territory, it goes with it.

So one of the values, at least—I tend to agree with you, you can just write a lot of stuff in law, and it can be meaningless—but part of it is to remind us as committees and subcommittees that we have established deadlines, and that forces us in turn to put some pressure on agencies to live up to them. So in a way, deadlines are a prod to oversight as well as a prod to the agencies. But I thank you for that testimony.

I gather that you would agree that this is a goal that is worth pursuing, despite the difficulty—that we want reasonably, if not perfectly, but at least reasonably uniform water quality standards?

Mr. Van Putten. It certainly is, and what we have done in my written statement and in prior petitions to the Environmental Protection Agency is we have identified the key areas, the key subjects, that we think require some uniformity. We have not suggested that we need to have the States marching in lockstep on all points, but we have raised a number of specific questions, most of them related to persistent toxic pollutants and avoiding the use of dilution instead of a substitute for treatment. And we have identified specific areas, and we have suggested that these are the key questions that ought to be addressed by uniform standards because they are the most important questions in terms of the amounts of these toxics.

If I might, I'd like to comment on the public participation issue, since I raised that in terms of this uniform water quality standards effort.

I think one of the worst things that has happened to the environmental movement is the institutionalization of public participation because agencies are adept at coming up with committees for public participation, and you spend all your time on those committees and do not have a great deal of influence on the ultimate result.

The key to public participation is being at the table when the decisions that matter are made; that is the key. And it is real hard to institutionalize that. I think the best illustration is the much-touted "Glee Club" plan we have heard about this morning for these model water quality standards, where the citizen public participation is going to be fragmented, and the public will have a little committee, and then we are going to talk to a technical committee, who is going to talk to the steering committee that actually makes the decisions.

From my point of view, if the public cannot be on the steering committee that makes the decision, it is a waste of our time to participate. We might as well sit and home and wait and see what EPA comes up with.

While we are supportive of this model water quality standards initiative, we have been pressing the Agency very, very hard that if they are serious about this cooperative effort and serious about building citizen support, they have got to have the public involved in the steering committee, or whatever they call it, but at the table when they make those decisions.

Senator Levin. Just one additional question, Mr. Van Putten. You seem somewhat skeptical of the Lakewide Management Plan process. Have you given up on it? Should we light a fire under EPA, which is what our inclination is, to get on with it, or are you saying that is pretty much a waste of time?

Mr. Van Putten. No. I think the planning process has a lot of value. It is not something that I have the constitution to be real effective in myself. I am more of an incrementalist and I look at the existing plans, like the strategy, and I ask the question: Has it made any difference? And the answer that I come up with is an unequivocal "no".

We have brought the litigation to try and make that strategy make a difference. So I am a little skeptical about bootstrapping that strategy into a new plan. Our philosophy is that it is time to "put up or shut up" on these plans and agreements. If the Great Lakes Water Quality Agreement doesn't mean anything more than fine words on paper, we would like to demonstrate that as publicly as we can so that the environmental groups and the citizens will no longer delude themselves and waste their time working on those issues, but will focus their efforts on things that are going to make a difference.

So I am skeptical, but nevertheless I do recognize the importance of taking a more long-range view, and at this table are a number of people who have done very well in working on those plans.

Senator LEVIN. Ms. Schaftlein, let me ask you that same question, because that is a critical issue for us as to how much emphasis we put on pressing forward with these plans, trying to get some targets into law or into administrative practice, how much effort we put into oversight. It is a tremendous effort, as you can imagine, both legislatively and just oversight-wise, to get into this area. Is it worth it? Should we give up on it, in your view, or are we on the right track?

Ms. SCHAFTLEIN. I think we are on the right track, and I don't think we should give up on it, because when I go to talk to people or try to get groups motivated on issues on the local level, I need to have a vision for why we are doing this and how we are putting it all together and how it is all going to connect. And if there is some plan that everyone has agreed to, has participated in, and there is some recognition that what I am doing in Grand Rapids is being done in Illinois and in Wisconsin and Indiana as well, there is a little bit more of the we are working together atmosphere, and it is a very sellable point on a local level, when doing advocacy work. So I strongly concur that we continue on it.

Senator LEVIN. Let me thank you all for coming forward and for the patience with which you have dealt with us this morning. The hearing has gone a little longer than we thought it would, which means that you probably have been here longer than you planned.

The subject is one which I don't have to emphasize the importance of to you folks—it is your lives, and you have dedicated yourselves to it. Your organizations have dedicated themselves to it. We are glad you are where you are. We hope this hearing will lead to two things—one, prod the EPA. and ourselves in Congress, to move with greater determination toward a goal that I hope we all share, and believe we do. It is a precious and unique asset we are talking about here. There is nothing like it, and it can never be replaced. So it is not something which we can talk about substituting something else for. This is it.

We hope, in addition to the prod that this naturally gives to an agency when we engage in oversight work, which is part of the legislative process, that we might also do some legislative good inside the law itself. I don't want to say that we know exactly what we should do in that area. We think we know; we think at a minimum we should put some target dates into law for these various processes, both because of the prod that it will give to the Agency, which needs prodding, and also again as a calendar reminder to ourselves that time is passing and a unique asset is degrading.

We are going to need your input in this if we go that route. If we want to put some targets into the law, we are going to need some suggestions from you as well as from State agencies and obviously from EPA and other agencies and other groups that are not even here today as to what are realistic and practical target dates for various steps in the Lakewide Management Plans and the RAPs, both. But I gather none of you have given up on that process—that is important for us to know. I know that you are frustrated with it, and at times you feel like giving up on it, but you haven't yet, I gather, any of the four of you or your groups. That also has an impact on us, because we will continue, then, to press very hard to make this current system work rather than think about junking it and replacing it at this point, at least, with something else.

So we are grateful to you for being here, for the work that you and your organizations have engaged in.

We also thank the City of Grand Rapids for making the City Council Chambers available to us this morning.

The Subcommittee stands in recess.

[Whereupon, at 1:45 p.m., the Subcommittee was adjourned.]

OVERSIGHT OF EPA AND THE GREAT LAKES WATER QUALITY AGREEMENT

TUESDAY, MAY 23, 1989

U.S. SENATE,
SUBCOMMITTEE ON OVERSIGHT
OF GOVERNMENT MANAGEMENT,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Green Bay, WI.

The Subcommittee met, pursuant to notice, at 9 a.m., in the Brown County Library Building, Green Bay, WI, Hon. Herbert Kohl presiding.

Present: Senator Kohl.

Staff present: Elise J. Bean, Counsel, Subcommittee on Oversight of Government Management; Beverly Anthony, Legislative Assistant to Senator Kohl; William Ritz, Press Secretary to Senator Kohl; Jonathan Sender, Milwaukee, WI, Office Director to Senator Kohl; Eve Galanter, Madison, WI, Office Director to Senator Kohl.

OPENING STATEMENT OF SENATOR KOHL

Senator KOHL. Good Morning. I am Herb Kohl, and I am here to open this hearing of the U.S Senate Subcommittee on Oversight of Government Management. I have a statement that I will read at this time.

And we are here today, ladies and gentlemen, to conduct and to address one the most important environmental issues facing the residents of Wisconsin—how to clean up the Great Lakes as quickly and as effectively as possible. This is more than a academic issue. The Great Lakes contain 18 percent of the world's fresh water supply. Twenty-five million Americans derive their drinking water from the Great Lakes and millions more depend on them for commerce, industry, and recreational activities.

Bringing these figures closer to home, approximately 25 percent of all Wisconsin residents get their drinking water from Lake Michigan and Lake Superior. Clearly, these two lakes represent our State's most valuable natural resource. The purpose of this hearing is to encourage and evaluate the work that public officials, industry, and interested citizens are doing in our common effort to preserve the integrity of the Great Lakes.

So far, progress on improving water quality in the Great Lakes sounds like a good news/bad news story. First the good news: Some progress has been made.

In 1972, the Great Lakes were—in a word—dying. Conventional pollutants like phosphorus were "choking" the lakes, killing fish, plants, and aquatic wildlife. People demanded action, and they got it. The United States and Canada signed a treaty, the Great Lakes Water Quality Agreement of 1978, which committed both nations to undertake a number of specific actions aimed at reducing pollution in the lakes.

That commitment was met. Between 1972 and 1986, phosphorus levels in the lakes were reduced by 80 percent. That is a remarkable success story demonstrating that a great deal can be accomplished when Federal, State, and local interests work together to fight pollution. That folks, is the good news.

Now, for the bad news. As conventional pollutants decreased, and we nursed the Great Lakes back to health, scientists and environmental experts began to take note of an even greater threat to the Great Lakes ecosystem and human health: toxic pollutants. Although in many areas the lakes were looking better, toxic materials began to be discovered throughout the lakes including PCB's, lead, mercury, arsenic, cadmium, dioxins, and furans.

Because we do not see the effects of these toxic pollutants when we look at the lakes, it would have been easy to ignore them. Thanks to the diligence of a dedicated band of scientists, community activists and public officials, that did not happen. Once again, people demanded action. And once again, government responded. In 1987 the United States and Canada amended the Great Lakes Water Quality Agreement to increase attention on toxic pollutants. The amendments reaffirmed our pledge to "virtually eliminate" the discharge of persistent toxics to the Great Lakes. New provisions addressed such problems as contaminated sediments, contaminated groundwater, and air toxics.

Specifically, those amendments called for a number of actions on the part of both nations. For example, the amendments required special clean-up efforts for forty-two sites with severe contamination along the Great Lakes shoreline. These 42 "Areas of concern"—commonly called "toxic hotspots"—are located throughout the Great Lakes. There are 30 hotspots in the United States and five of those are located on Wisconsin's shorelines including the St. Louis River on Lake Superior and four sites along Lake Michigan: the Milwaukee Estuary, Southern Green Bay, the Menominee River, and Sheboygan Harbor.

For each toxic hotspot, the Water Quality Agreement requires the development of a specific clean-up plan referred to as a "Remedial Action Plan" or "RAP." But despite a reasonable schedule published in 1985 for the completion of these vital clean-up plans, only one plan has been completed and readied for implementation. As many of you know, that plan is the Green Bay Remedial Action Plan. The efforts of the State of Wisconsin, local government officials, and community leaders are to be commended for this accomplishment. However, the report card on the other RAP's in the state is less than satisfactory.

In fact, the record is abysmal. The Sheboygan Harbor RAP was originally scheduled for completion in December 1986. That date was moved back to October 1988. Now, after both of these deadlines have been missed, we are told that the new target is December 1989.

For the Menominee River, the original deadline was June 1986. After that date was missed, the new deadline was set at October 1989. Now, we are told that it will be December of this year at the earliest before that RAP is completed

Milwaukee's story is even worse. After missing a June 1985 deadline, the schedule was pushed back 4 years to October 1989. But after this additional time, work has barely begun on development of a RAP for the Milwaukee Estuary. Estimates are that 2 more years of work are needed and the deadline has been now pushed back to 1991. Worse yet, we are just talking about the clean-up plans—the easy part. The real work—the actual clean-up—remains on the distant horizon for all but Southern Green Bay.

And there is more. In addition to the Remedial Action Plans for specific problem areas, the Water Quality Agreement requires the development of Lakewide Management Plans for each of the Great Lakes. These plans are intended to provide integrated management strategies for each lake. The United States pledged to begin with the plan for Lake Michigan, but still has not produced even an outline for the Lakewide Management Plan after 2 years.

In my view, these delays are embarrassing and totally unacceptable.

When I try to understand why we have not done more, I look first to the Federal agency which is responsible for ensuring action on the Great Lakes. Congress clearly designated the Environmental Protection Agency, the EPA, as the lead Federal agency. We gave the EPA the job of making sure that we met our obligations under the agreement.

This hearing is designed to find out where the EPA has been while deadlines have slipped by and toxic pollutants have accumulated in our lakes. What has the Federal Government done to ensure that the United States is meeting its treaty obligations? What has the government done to protect the safety of its citizens, and the health of its wildlife and natural resources?

To answer these questions, we have to talk to the States and localities which have been given on-line responsibility for developing the RAP's. Why haven't they made more progress? Has the EPA been giving them the necessary assistance and leadership? Why has Green Bay been able to develop a program while every other locality is still only drafting proposals?

This is not, however, intended to be an exercise in placing blame. I am here to find out what we have to do to get the job done. Do we need more people and more money? Do we need less bureaucracy, more action at the state and local level, or more pressure from the feds?

These questions deserve an honest answer. As a lifelong resident of Wisconsin, I, like you, love our Great Lakes. As a concerned citizen, I, like you, know how valuable they are both economically and ecologically. And as an elected official, I feel very disappointed about our failure to do what needs to be done to clean them up. If we are not going to demand that our government protect the Great Lakes, then we are only cheating ourselves.

I hope that this hearing will help to establish a record on the EPA's efforts to implement the Great Lakes Water Quality Act. This is my chance to hear from individuals and officials in Wisconsin about their experiences in developing clean-up strategies for Lake Michigan's hotspots. At hearings to be held later this summer in Washington, D.C., I will present these findings to the EPA and demand that the delays and the problems be corrected. In addition I would like to take this opportunity to announce that I will be forming an Environmental Advisory Committee very shortly. This committee will be made up of Wisconsin residents who are concerned about the environment and who will keep me informed about the environmental concerns of our State. I appreciate the interest and the cooperation of all those who are in attendance here today and by working together I believe that we can make a speedier cleanup of the Great Lakes possible.

I have some good news this morning. I was pleased yesterday to learn that EPA has finally released two grants to the Wisconsin Department of Natural Resources. These grants after months of delay were released yesterday. One grant, for $48,887, will allow the State to hire an individual, a qualified individual, to help coordinate and write the Menominee River RAP. Another grant for $55,000 will pay for a qualified staff person to help us write the Milwaukee Harbor RAP.

Let me say that I am very grateful that the EPA has finally approved these grants. It is very important to our communities. At the same time I am concerned that it took this field hearing to pry this money loose.

As we get into the hearings I would just like to establish the ground rules. Each person on each panel will have an opportunity to speak, and then I will ask questions of the whole panel. Each speaker should keep his or her opening statement to 10 minutes or we will have no time for questions. We have three panels, approximately 1 hour for each panel, and all written materials will be made part of the record in their entirety, and we will keep the record open for additional materials. Thank you very much.

I would like to call our first panel. On our first panel we have Ms. Rebecca Leighton, Dr. Bud Harris, and Mr. Don Schneider.

I would just like to say a word about each of our three panelists. Rebecca Leighton is director of the Green Bay Office of the Lake Michigan Federation, an environmental organization with chapters in various cities along Lake Michigan. She is also a Green Bay alderman and a member of the Brown County Board of Supervisors. She has been one of the most active individuals in the development of the Green Bay RAP and she participates in numerous environmental organizations.

Dr. Bud Harris is a professor at the University of Wisconsin-Green Bay Campus. He has spent years researching the environment of Green Bay and his work is very highly regarded. Mr. Don Schneider is director of research and development for Fort Howard Paper Company. He is also on the local Technical Advisory Committee for the Green Bay RAP. Welcome.

Ms. **LEIGHTON**. Thank you.

Dr. **HARRIS**. Thank you.

Mr. **SCHNEIDER**. Thank you.

Senator **KOHL**. Ms. Leighton, would you like to make your statement, please?

TESTIMONY OF REBECCA LEIGHTON, DIRECTOR, GREEN BAY OFFICE, LAKE MICHIGAN FEDERATION, ALDERMAN, CITY OF GREEN BAY, AND MEMBER, BROWN COUNTY BOARD OF SUPERVISORS [1]

Ms. LEIGHTON. Thank you. We greatly appreciate this opportunity to testify. I am representing the Lake Michigan Federation.

We appreciate this opportunity to speak before you, and we appreciate your coming to Green Bay. It means a lot to us.

Senator KOHL. Thank you.

Ms. LEIGHTON. I am here representing the Lake Michigan Federation, which has been working the last 3½ years on the Green Bay RAP. In that time we have learned a lot about how to make the remedial action plan process work and also what to avoid in the process, and we would like to make several recommendations on how this process could be moved along more quickly.

As you mentioned there are a number of problems around the Great Lakes. I think we have learned a lot here that could be applied elsewhere. First of all, we do believe that more staff is needed to write these plans. We are grateful to hear about the grants. However, there is a great deal of support needed for the one staff person to write one of these plans, because of the complexity of coordinating all the various committees that are necessary. An ecosystem approach covers a lot of different issues at once. It is very difficult for one staff person to coordinate, and there needs to be a commitment on the part of the DNR and EPA to provide the technical support to that person to prepare the information accurately for the plan and move it along.

Most of the people who participated in Green Bay—we had over 80 people—were volunteers, and we met only monthly. This is one cause for the delay in getting these plans written. It is largely a volunteer effort coordinated by a staff person, but it is volunteer. In order to make this an effective process, and to move it along more quickly, it would be necessary to provide more technical support.

Also, I think it is important to recognize that you have to plan ahead for the implementation process. There needs to be more care taken setting up a structure that will actually work. Ours has been a bit cumbersome, and very slow to get going here in Green Bay, because we have a broad committee structure which takes a lot of coordination.

We have not had many agency staff people to work with at the implementation level either, so that we have had a great deal of confusion and a great deal of fumbling to decide where we want to center our priorities. That needs to be planned ahead for, and we need staff and technical support again to make this work. We also need some internal consistencies within the agencies to provide the leadership and the direction within the EPA and the DNR, or the other state agencies that are responsible to make sure that their own internal programs are working to meet the directives of their Remedial Action Plans as they are developing, and during implementation. We have had some real concerns over this first year of implementation in Green Bay, that our agency, the DNR, is not consistently upholding the recommendations of our Green Bay RAP, and I have submitted a letter with this testimony that is a copy of one sent to our DNR Secretary Besadny raising a number of concerns on that. We need to have more leadership on the issues, the policies, that meet the Great Lakes Water Quality Agreement.

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[1] See p. 202 for Ms. Leighton's prepared statement.

Two key items that seem to be neglected in most of the Remedial Action Plans around the Great Lakes, though we did make an attempt here in Green Bay to include them, are the ecosystem approach—addressing all issues that affect water quality in a plan—and also the concept of zero discharge—the elimination of persistent toxic discharges and setting clear goals in the plans for reaching this goal.

Those two items appear to be neglected in a lot of plans. We are seeing single purpose plans being written around the lake that just address one problem and ignore others. Overseeing halfway solutions rather than total solutions or clear goals towards the elimination of toxics. Those issues need to be resolved. I have detailed testimony attached relating to various aspects of the Great Lakes Water Quality Agreement and some of the issues that we have grappled with here in Green Bay. Things like sediment contamination, where we have no national programs and no state programs, for dealing with this major problem. In fact, it is our worst problem in Green Bay, as it is in many other areas of concern.

The sediments are clearly the largest source now of contamination causing fish advisories and reproductive problems in birds, and we need a national program developed in order to address this consistently around the Great Lakes. The local communities just do not have the technical resources or the financial resources to coordinate the kind of program it will take to solve this problem. We have made several recommendations on details of that in our testimony.

Also we need stronger efforts on non-point pollution sources. There were $400,000,000 authorized in the Clean Water Act. However, over the last 2 fiscal years nothing was budgeted, and we are seeing that repeated again this year. We need to have a stronger effort to get that program going because we know that land runoff is one of the major sources of toxic contamination and also nutrients.

I think another major area where we have seen no national leadership and where there is a gap in our laws is on the issue of air toxics. We have found that in the Upper Great Lakes, as much as 50 percent of the input of toxics, new toxics, entering the system, are coming from the air rather than waterborne sources and even so our Clean Air Act has only regulated seven chemicals out of a multitude they could have been regulating to control their toxic discharges and reduce the loading into the system. We desperately need a national program, and I make specific recommendations concerning that in written testimony also.

Finally, I would like to summarize by saying that we strongly feel that without the direct intervention of the Federal EPA in these Remedial Action Plans, without their leadership and input during the planning stages as well as the implementation we are not going to see progress on these plans. It is important that they provide outside energy to a local community to make things happen. We have not really seen that. In fact, in looking back over the last 3½ years I honestly cannot think of any major input EPA made in our Green Bay Remedial Action Plan. It was all provided by the DNR staff people and the local leadership. I cannot remember them effectively pushing for any particular item on the plan. That may be a gap in my memory, but it serves as an indication of their stand-off approach towards these plans. I will be happy to answer questions.

Senator KOHL. Thank you, Ms. Leighton.

Dr. Harris?

TESTIMONY OF H.J. HARRIS, PH.D., PROFESSOR, UNIVERSITY OF WISCONSIN, GREEN BAY, WI [1]

Dr. HARRIS. I have been involved in research with the Sea Grant Program for about 10 years on Green Bay. I was heavily involved in the development of the Remedial Action Plan through a variety of technical committees, and I presently am the so-called on-site coordinator for the Green Bay Mass Balance Study sponsored by EPA which is an ongoing study.

I have written testimony in pieces. I am a professor, as you know, and will plead guilty as my students do and say I will turn it in later. There are however a number of comments I do want to make.

First of all, there are problems and there are problems, and I like to separate the kinds of problems that we are dealing with. Let me just try to identify what I see over the past 15 or 20 years of the problems you have already identified, Senator Kohl. Some of these pollution problems have been solved, and I call these first order pollution problems. Those are basically reduction of so-called conventional pollution such as organic wastes and suspended solids. This has been done primarily through setting water quality standards and; treatment facilities constructed with cost sharing from state and federal government. In many instances this has led to immense improvements, the Fox River is an example of that. The notable walleye population is certainly a result of increased oxygens, which is the result of reducing conventional pollutants.

The second class of problems which I call second-order problems is where the cause of pollution is known and the technology is available for its resolution. But implementation is slow to occur because of economic and or political constraints. This is the case with so-called non-point source pollution where the pollutants come from diffuse sources such as agriculture and urban run-off. There is a lot of work that remains to be done with non-point pollution problems.

We get onto a different group of problems which are third-order problems. These are problems which are not yet clearly defined, the magnitude of the effects of the pollutants is not yet understood, and the solution of the problem remains unclear. This is the case with persistent toxic chemicals, such as chlorinated hydrocarbons, and heavy metals. It will likely be 25 to 35 years in my judgment before some of these kinds of problems will be resolved.

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[1] See p. 223 for Dr. Harris' prepared statement.

A fourth group of problems or fourth-order problems are those which have yet to be identified. These are the surprise problems which come about inadvertently by some of our own actions for which we do not understand the consequences. Fourth-order problems become third-order problems once we have discovered them. And finally the fifth-order problems are those for which we understand the cause, but there simply are no solutions.

An example of this kind of problem is that of species extinction. Once the species is extinct there is no possible way to restore it. There have been species of fish that have become extinct in the Great Lakes. A second example is invasion by exotic species, such as lamprey and carp which have become well-established and cause immeasurable damage.

Another example is the CO_2 buildup in the atmosphere and the global warming and climate change which, according to many, is bound to occur in the next 50 years or so. In this case we cannot entirely reverse the problem. We can only begin to plan for the significant changes which are really inevitable.

I have been involved with a group of European and North American scientists who have compared some of the problems of the Baltic Sea and the Great Lakes. What is interesting about this comparison—although these two large bodies of water are quite different, the problems encountered in the system are very similar, if not the same. It has become increasingly clear that many of these problems arise from man's economic activities on the lands surrounding these great water bodies.

This does not mean that economic activities must be curtailed if problems are to be resolved, rather it implies that economic activities must become compatible with the ability to sustain the valuable resources associated with the Great Lakes and bodies like the Baltic Sea.

Let me spend the remainder of the time here addressing two of these problems that I think are most serious, at least in the Green Bay case and I think this is probably true for most of the Great Lakes. These are the kinds of problems we also saw in the Baltic.

The problem of non-point source pollution as I classified it is a second-order problem and is a frustrating one because the technology to solve that problem is known. It has been known for decades. The kinds of best management practices on agricultural land and other areas really have been available, but yet for either economic, political, or even cultural reasons we have not been able to implement basin wide programs.

Wisconsin has their own program which has been effective but it can only bite off a small piece at a time and part of the reason we do not see change is because we are dealing with immense land areas, and when you work only with a small piece it does not effect a solution to the larger problem. Now, what is the resolution. Well, one is incentive. We need more incentive for farmers to become involved in best management agricultural practices and that is a difficult issue.

There are certainly cultural barriers. For example, we have for the last 50 years improved yields in corn by increasing the amount of fertilizers, and the farmers have been listening and the emphasis has been on yields. It has become increasingly clear we are over fertilizing in many cases and fundamental things like fertilizer management or total nutrient management are programs that now must be implemented. It is going to be tough to try to get people that have been told for 50 years to use these materials to increase yields, but it is very clear the evidence is pointing in that direction now. Educational efforts, and monies for cost-sharing practices are needed in particular in the non-point source program.

Tied to that is another issue of suspended solids and sediments as we call them or erosion of particles off the land. We know the soil conservation programs have been somewhat ineffective. Again, we can either use a positive incentive approach or perhaps there has to be more stick involved at this time, I am not sure.

Addressing the toxics problem, it is my belief that the problem of persistent toxic chemicals in the environment is presently intractable.

I say presently because we always strive to resolve the problems. But in my estimation it is intractable for a number of reasons. One, we simply do not know enough about how these materials are impacting the ecosystem. And that is because of the state of the understanding of ecosystems.

There is a new field, of ecotoxicology and by the name alone it is a melding of ecology and toxicology. Toxicology has very well-developed predictive powers because it looks at one species at a time and controls all the variables.

Ecology does not have strong predictive powers because there are too many variables in the environment. Now, we have melded these sciences and we are trying to apply toxicology rules in an extremely complex environment. Where we are is simply not understanding the impacts of toxicants at the system level. We can understand toxic effect the individual level, but when you try to put it at the system level we do not understand how toxics effect the system.

What are organizations (agencies) doing about it? EPA is and has been mounting new efforts. Their first concern has been the health of people, and they have developed various kinds of programs to deal with risk and toxicants. They are also mandated to protect the system, the well-being of the wildlife and other aquatic organisms. That is a much more difficult thing to do, to insure the integrity of the ecosystem. The point that I want to make here is that the toxic problem is one which definitely needs more resources, and both from a scientific standpoint and from the managerial standpoint it is a real tough problem.

Senator KOHL. Thank you, Dr. Harris. Mr. Schneider?

TESTIMONY OF DON SCHNEIDER, DIRECTOR, RESEARCH AND DEVELOPMENT, FORT HOWARD CORP., MEMBER, TECHNICAL ADVISORY COMMITTEE, GREEN BAY RAP [1]

Mr. SCHNEIDER. Thank you. I, too, would like to thank you for permitting me to make this statement at this hearing.

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[1] See p. 236 for Mr. Schneider's prepared statement.

My name is Donald J. Schneider, and I am Director of Research and Development for Fort Howard Corporation located in Green Bay, Wisconsin. Fort Howard Corporation is a leading producer of sanitary and food service products such as toilet tissue, napkins, toweling, cups, plates, straws, as well as ice cream cones. Our corporate headquarters is located in Green Bay, Wisconsin. We manufacture tissue products at this site and our employment totals approximately 3,200 people.

Fort Howard's tissue facility in Green Bay produces approximately 1,000 tons of paper per day. The raw material for these products is wastepaper that is recycled to reclaim the useful fiber. We operate two other tissue mills in the United States, and altogether we recycle approximately 1 million tons of wastepaper each year. This amount of wastepaper saves the equivalent of 65 square miles of forest each year which also greatly reduces the need for landfill space. If that paper had to be disposed of in a landfill, it would cover 115 acres to a depth of 15 feet each year.

I participated as Fort Howard's representative in the preparation of the Lower Green Bay Remedial Action Plan. I served as a member of the Toxics Substances Technical Advisory Committee to the Citizens Advisory Committee who developed the RAP. I am continuing to work with the RAP on several subcommittees of the Implementation Committee. I presently am a member of both the Toxics and Point Source Management Advisory Committee headed by Bud Harris, and the Monitoring and Research Advisory Committee headed by Cliff Kraft.

My comments today will follow the order you suggested in your letter inviting my participation in this hearing. Therefore, the first item I would like to discuss is the status of the Green Bay Remedial Action Plan and the prospects for successful implementation of that plan.

The lower Green Bay Remedial Action Plan was approved as part of Wisconsin's Water Quality Management Plan by Secretary Besadny of the Wisconsin DNR on February 28, 1988. This plan has just recently been approved by the International Joint Commission which oversees the implementation of the Great Lakes Water Quality Agreement of 1978.

The March/April 1989 issue of Focus, a publication of the IJC states on page 17 and 18 that the commission completed its review of the Fox River/lower Green Bay RAP at its March executive session. I would like to quote from page 17 of that document. "In general, reviewers involved in the Water Quality Board process felt that this RAP was a good example of combining significant public involvement and an ecosystem approach to the development of a RAP. They concluded that stage one requirements and annex two of the agreement, that is, problem definition and identification of causes, had been met. Stage two requirements, that is, identification of remedial actions, have been partially met; additional studies are being performed to identify remedial actions for contaminated sediments. Further, they felt that there needed to be specific agent responsibilities for each remedial action identified. Wisconsin Department of Natural Resources is addressing these concerns and has established an implementation committee to help identify lead management agencies to implement the plan."

Since this plan's approval by the Wisconsin DNR, work has started on implementing the plan. An implementation committee has been organized along with various subcommittees to provide assistance and input to the operations of the implementation group.

The Wisconsin Department of Natural Resources has made significant strides toward the implementation of the sixteen key action areas identified by the plan. As the IJC stated in their review, the identification of remedial actions have been partially met and additional studies are being performed to identify the remedial actions for contaminated sediment. Of major significance is the mass balance study of the sources, environmental pathways, and fate of several toxic substances in Green Bay. This mass balance study is being mainly funded by the EPA, and it is being conducted with the cooperation of the EPA, the Wisconsin DNR, the University of Wisconsin Sea Grant and others.

A March 16th and 17th, 1989 workshop conducted by the research and monitoring subcommittee identified over 20 studies which are presently underway, all of which will have impact on the Remedial Action Plan. Much of this data essential to guiding actions on this enormous task of remediation are now being collected and will be available within 1 to 2 years.

It is my belief that the implementation of the Remedial Action Plan can be successfully accomplished; however, it is a tremendous task to undertake. It is essential that the necessary data base be successfully collected, analyzed, and interpreted before implementing the plan. This will better ensure its success environmentally as well as to obtain maximum value for the monies spent.

The second area to be addressed is the participation by Green Bay's corporate/industrial community in the development and implementation of cleanup plans and plans for future involvement in cleanup activities.

The industrial community has been very active in the development and implementation of cleanup plans. This is expressed by industries' involvement in the various advisory committees to the Implementation Committee as well as work with the Wisconsin DNR to implement the Clean Water Act's goal of prohibiting the discharge of toxic pollutants in toxic amounts. This correlates to the RAP's key action item number three which is "to eliminate toxicity of industrial, municipal, and other point source discharges."

This essential first step has recently been completed by the development of regulations for establishing Wisconsin's Water Quality Standards and procedures for their implementation.

These water quality standards have just been conditionally approved by the EPA. The Wisconsin DNR has now required that industrial and municipal waste treatment plan permits include biomonitoring and whole effluent toxicity limits, when needed, to eliminate both the acute and chronic toxicity of effluent discharges to State surface waters including the Fox River and Lake Michigan.

Also, rigid standards have been developed which control the discharge of toxic substances to the river based on priority pollutant analysis, and the water quality standards as developed and implemented. Industry will continue to be very much involved in the development and implementation of cleanup plans and cleanup activities of the RAP.

The third item dealt with the economic implications of Lake Michigan/Green Bay pollution for the City of Green Bay and surrounding communities and the economic benefits that our community might realize from a cleaner Green Bay.

Since the implementation of best practical treatment systems by municipalities and industries in the Fox River starting in 1972, the total suspended solids and BOD loading to the river has been reduced substantially. These efforts along with wasteload allocation limitations for industries and municipalities on the Fox River have ensured that the dissolved oxygen content of the river is maintained at five parts per million of oxygen or greater throughout the entire year.

Toxic discharges have likewise been significantly reduced in recent years. These activities have greatly improved the conditions of the river and a very popular sport fishery has developed. Implementation of the Remedial Action Plan will build on the benefits achieved to date.

Incidentally, Fort Howard is a good example of the significant reduction achieved in recent years. Because Fort Howard is a recycler of wastepaper and because PCB's are present in all grades of wastepaper, PCBs are also in our effluent in minute amounts. However, despite increasing our production between 1976 and 1987, we have been able to reduce PCB discharges by over 90 percent to less than 15 pounds per year or less than 0.5 parts per billion, a level considered the lowest detectable level by many laboratories. Water samples taken above the DePere dam, however, which is located about 4 miles upstream from Fort Howard show that between 800 to 1,200 pounds per year of PCB's are coming over the dam with the water. The DNR has recognized that Fort Howard's PCB contribution is not significant as stated in the briefing memo received with our permit renewal. Despite this large reduction and achievement, our efforts to further reduce PCB discharges will continue.

Of economic significance to the Green Bay area is the maintenance of a viable port for loading and unloading ocean and lake vessels. Many commodities enter and leave our port such as pulp, cement, coal, grain, lime, food and other items. Maintenance dredging is required in order to maintain the proper depth of the channel and to maintain the various turning basins. This maintenance dredging removes sediments from the bay and river bottom that are contaminated. Continued dredging to maintain the navigational channel will remove further sedimentation. This effectively removes contaminated sediments.

The Corps of Engineers for the past several years has attempted to expand a Confined Disposal Facility in the lower Green Bay harbor identified as Renard Island. This disposal facility would be used to store and contain the dredging materials from the waterway. The IJC Sediment Subcommittee in an October 1988 draft report listing the options for the remediation of contaminated sediments in the Great Lakes states "That CDF's, if properly designed and operated, have succeeded in isolating and preventing polluted sediments from re-entering the lakes. In short, technical and environmental feasibility of CDF's have been well-established from experience gained over the years."

Ironically, this endorsement of CDF's by the IJC is at odds with several environmental groups which have led to various disputes and delays over the dredging of the waterway.

The EPA is investigating other sediment remediation methods. There are 42 areas of concern in the Great Lakes and the EPA is working to establish pilot projects at five locations. According to the EPA's current schedule, the pilot projects will be completed and a final report to Congress prepared in fiscal year 1992. This report will include assessments of the significance of the contaminated sediment problem, the technologies that can be used to address the problem, and estimates of the cost of applying these technologies. Green Bay is not one of the selected sites. It is my assumption that the other five sites were either more highly contaminated or presented more ideal conditions for conducting a pilot project.

It is my belief that the implementation of the Remedial Action Plan must be done very carefully for us to achieve maximum impact of the money spent on the cleanup activities. Recent investigations of the toxicity of sediment have been conducted by the EPA Duluth lab using acute bioassay procedures. EPA's Duluth lab has determined that the toxic nature of the leachate from the sediment is due to the presence of ammonia in the sediment rather than the presence of toxic substances.

A significant source of the ammonia might be through the natural decomposition of organic material in this eutrophic system. This, of course, is a preliminary report and must be confirmed, however it illustrates that sufficient knowledge must be available in order to proceed correctly with any remedial action problem.

In conclusion, it is my opinion that the RAP prepared by the Wisconsin DNR, and accepted by the IJC Commission for Lower Green Bay and the Fox River is an acceptable plan and one that can be implemented. However, because of the tremendous costs associated with implementation and to better ensure success, remediation must be done only after assessing the technical information that is now being developed in order to determine the most effective way for correcting the problem.

Senator Kohl. Thank you, Mr. Schneider. Mr. Harris, I have here the DNR list of fish——

Dr. Harris. Yes.

Senator Kohl [continuing]. On Lake Michigan that are inedible.

Dr. Harris. Correct.

Senator Kohl. It is a long, long list and it contains most of the fish that we like to catch and eat. Is it your opinion that we can get to the point where this list or most of it can be thrown away, and we can fish the waters, catch the fish, and eat them?

Dr. Harris. Well, that is a real difficult question. I said earlier that it is my estimation that it is going to be 25 to 35 years before we see resolution of these toxic contaminant problems, and one of those resolutions is to remove the advisories that we presently have. I cannot imagine that we will see resolution in less time than that. I say that because even conventional pollutant problems have taken something like 40 years to really resolve. And we have here a problem of a different order of magnitude so it is my guess that we are talking about a 25-year problem.

Senator KOHL. Well, one of the major goals in establishing and implementing a RAP is to clean up the water so that edible fish can be caught. Are you suggesting that in your judgment we are 25 or 30 years away from that goal?

Dr. HARRIS. That is what I am saying, and I am saying that on the basis of what we have seen in terms of how long it took to really correct a problem of conventional pollutants and that was about 40 years from the time it was recognized until effective action. We now have the mandate, in the Great Lakes Water Quality Agreement and the Clean Water Act.

What we are saying about toxics is that we are only now beginning to understand the movement, fate and eventual effect of these materials in the system. It is far more complex than for conventional pollutants and so it is not unreasonable at all to suggest it is going to be 25 years before we see resolution of these problems. And that does not mean we are going to ignore them in the meantime. It means we have to give them significant attention.

Senator KOHL. Okay. We can get back to that because that is a very important statement you are making. Ms. Leighton, you talked about the need for national leadership if the plan is to get implemented?

Ms. LEIGHTON. Yes.

Senator KOHL. Particularly with respect to the cleanup of sediments which are so important. Are you suggesting that the fact that we have the plan is obviously one very, very important step, but the whole point of it is the implementation of the plan?

Ms. LEIGHTON. Yes.

Senator KOHL. Would you comment a little bit more about how you feel that you need more national direction, leadership, and involvement to get that plan implemented?

Ms. LEIGHTON. Well, currently the only Federal program we have going now with dredging is just harbor maintenance, and channel dredging performed by the Army Corps of Engineers or small local harbor dredging.

We do not really have a remedial program. Superfund does not cover in-water contamination except in very limited circumstances where it affects drinking water supplies, and we are not seeing RCRA covering this problem either except in very limited cases. So it falls through the cracks, and we are finding that the agencies are overwhelmed by the technical nature of trying to determine what kinds of sediment contamination, what levels of sediment contamination, cause toxicity problems in the lakes or in the ocean areas. All along the coastal areas in this country, in the oceans, there are similar problems. It does not make sense to have all the State agencies going off on their own and repeating the same research and the same effort to develop criteria State by State. It is too confusing and too technical. It is also very expensive. It makes more sense to have a national program and national leadership to develop those criteria and provide standards and research for ways of remediating those problems, the technical knowledge of how to dredge properly, so that you are not re-suspending those sediments, but rather catching them and containing them quickly so they are not released into the water again.

That technology is actually developing faster in other countries than in the United States, and the technology is available in other countries but not in the United States. We need to see more national U.S. effort to address this problem of technology and criteria as well as standards for what we are going to require in given circumstances.

Senator KOHL. I want to see if I can understand what you are saying now. I want to see if I can repeat it back. That the implementation of the plan is a very complicated, involved process, and that we are not yet into it to any meaningful degree, and that to get into it successfully you need or we need here very much involvement from the EPA?

Ms. LEIGHTON. Yes. Our local committees are just incapable of dealing with this magnitude of an issue. Our Technical Advisory Committee, Bud and I both serve on, in fact, Don also, we are all volunteering our time, but we do not have the technical wherewithal, and the time or money to do the proper research to set up an actual program for Green Bay to solve our sediment contamination problem. We cannot.

Senator KOHL. So now that the RAP has been written successfully and completed in order to get at the job for which this is all intended you are suggesting that a whole new involvement in terms of people, process, technology, and funds needs to come from the federal level?

Ms. LEIGHTON. In looking at all the 42 areas of concern the vast majority have sediment contamination problems.

Senator KOHL. Right.

Ms. LEIGHTON. They are all a little different, but they have common problems. And it does not make sense to have each community trying to do the same research. It would make—it would be much more economical to have it done at one locality, the Federal level and the EPA. And to perhaps change the mandate of the U.S. Army Corps of Engineers to include remediation as well as just channel maintenance. We may need some effort there also. It is not a problem within the abilities of local communities. It is too technical.

Senator KOHL. Okay.

Ms. LEIGHTON. We have had one problem, I meant to mention in my comments earlier. We have seen so much focus on the sediment contamination problem—and it is recognized that it is our major problem—that there has been a strong tendency in the actions of the agencies to minimize other toxic imputs into the system whether through the air, through point sources, pipe discharges, or through land runoff, and so we see circumstances like on the Fox River where new discharges of toxics are considered insignificant relative to the sediment contamination. We are very concerned about this precedent being set with the new water rules that we have in Wisconsin, fearing that new inputs will be neglected until we develop a sediment program.

The Lake Michigan Federation believes that we need concurrent actions taken on the new sources as well as trying to address the large problem of sediments, and we need to see realistic rules that put real limits on discharges separate from the concern about the sediment contamination. It does not make sense to keep pumping in new toxics while we are trying to clean up the sediments. Obviously, it will just become recontaminated again. We should be working now towards eliminating toxic discharges.

Senator KOHL. Thank you. Mr. Schneider, would you tell us a little bit about your company's efforts in terms of technological development, what you see in the future, what kind of investment is necessary, and how you balance off that investment with the need to remain in business to provide employment and grow your company?

Mr. SCHNEIDER. I, of course, have a technical background, and that is where I can focus my remarks on. It is my belief that industry has made tremendous strides in reducing the discharge of toxic substances, and we have worked very much with the DNR in developing the new water quality rules that have just been implemented here in the State of Wisconsin and the EPA has just conditionally approved.

From our standpoint we operate a very efficient activated sludge treatment system for the removal of BOD and total suspended solids. We have gone through our permit renewal with the DNR. The discharge of toxic substances from our plant is really just limited to our discharge of PCB's which I said in my statement is well under 15 pounds per year, and the reason those PCB's are present is the fact that it is present in the wastepaper that we utilize. PCB's, in my opinion, have become a universal contaminant, that any piece of paper I analyze, I can find anywhere from 50 to 100 to 200 parts per billion of PCB's in that paper, and, therefore, if we, as a recycler of wastepaper, are going to take and reuse that wastepaper, and we find there is a minute quantity of PCB's in our effort, and in this particular case it is been between two tenths and three tenths of a part per billion. Long term we hope to eliminate this.

I seriously hope that it is within the very, very near future that we can completely eliminate it, but with many of these problems, the technology is not available to do so. I do not know how to do that, and we are going to be conducting in the future more experimentation to try and answer that question, but at this moment we do not have the answer, and the same is true of remediating the lower Fox and the lower bay. A tremendous amount of technical knowledge must be gathered before you can really develop a plan for remediating the bay. Maybe the solution is not to remove the sediments. Maybe the best solution is to leave them in place. We do not know that answer yet.

The scientists that are working on the problem have not come up with an answer. EPA has spent a tremendous amount of money sponsoring the mass balance study that is being conducted in the Green Bay area, and this is going to tell us a significant amount of information that is going to be of benefit to us in this RAP.

Senator KOHL. One other question on that point, Mr. Schneider, if the industry does not invest in pollution controls and cleanup now, won't it cost even more at some later point?

Mr. SCHNEIDER. Well, industry is investing in pollution abatement. We have continuously been improving our pollution abatement facilities throughout the years since the implementation of the first activated sledge treatment systems at Fort Howard. We started working with the pollution abatement systems really in the late thirties, early forties, when we started the—the wastewater treatment with the solids that we removed. It is our belief that we are continuously improving our plans, and we are spending money continuously to comply with the requirements of the Wisconsin DNR. What has to be done in the future, I cannot predict, but we are trying, and we are removing the BOD and total suspended solids and as much as the toxics as we possibly can.

Senator Kohl. Okay. I would like to go back and repeat a question and get an answer because I think it is pretty meaningful. How do we proceed from here now that we have a plan that has been written up very well and successfully? I think I hear all of you saying that in your best judgment implementation of this plan is far from ready to begin in a successful and meaningful fashion, and that when this plan is implemented, we are going to need heavy involvement from the Federal Government. Dr. Harris, even as that plan evolves you are suggesting that the goal of having waters that are, among other things, clean enough to swim and fish are many, many, many years away.

Dr. Harris. That is correct. Let me try to address this issue. First of all, we need to ask ourselves what kind of involvement. My own opinion is that it is extremely important to have these plans, Remedial Action Plans supported from the grass roots up. That has occurred in Green Bay for a variety of reasons. Part of that is because we laid the groundwork with a research base with other Federal funds through NOAA—through the program Sea Grant. That I think should be looked at as a model as well because you do not walk into these areas of concern and have this happen overnight. That is part of the time-line that I see. The Federal involvement is going to be necessary, I agree with Becky, because of the complex nature of this problem. And I have been increasingly impressed myself with the complexities involved so the kind of aid that we need is in part of a technical nature and of supplying resources so that the technology and the science can be further developed. Now, there are a variety of ways to do that, but I do not want to leave the impression that there should not be continued significant involvement on the local and the state level. There has to be otherwise the plan will not be implemented.

Senator Kohl. Of course.

Dr. Harris. So, what form should Federal involvement take, I am not sure, but one of the things that has become increasingly clear is that we do need some kind of a task force. This is a multidimensional problem. Becky has mentioned the Corps of Army Engineers. This is not casting stones but, in my view, there has been the noticeable absence in this whole process, not so much EPA, but the involvement with the Corps. We have at times made significant overtures to the Corps to become involved in the process of planning in Green Bay. Just for the record EPA initiated in part the process of the Remedial Action Plan in Green Bay. The individual is Kent Fuller, and he is with the EPA Chicago office. He came to us early on in this process and asked the university to get involved so there has been initiative on the part of EPA. In other areas there has been less initiative. There has been none from the Corps.

My point is this—the task force and I am not sure what that would look like, but it is going to take some effort like that involving the universities, involving the various agencies to focus on this problem of in-place pollutants. I agree with Becky because that is where the major problem is now, and to get the resolution and the remediation of the problem I still say is going to take someplace in the order of 25 years.

Senator **Kohl**. Ms. Leighton?

Ms. **Leighton**. Yes, I do not want to give the wrong impression that we will have to wait for implementation until we get national support. I think some of the recommendations can be done at the state level or the local level much more quickly than they are occurring now, and we have 135 different recommendations cutting across a whole host of issues, some of them are very local, like recreational access, shoreline management efforts, and some of them are clearly things that the state could be doing now. They are not taking leadership on them, so we are. It will take a tremendous amount of coordination, I think, to get all the recommendations moving. Some of them, like the sediment problem, will take a long time, but we could be moving on some of the other items very quickly. That is why it is so important to have adequate staff support to coordinate the effort because it gets confusing trying to deal with so many issues at once that are all or mostly technical issues.

Senator **Kohl**. Okay. I would like to ask just a couple of questions on the RAP before our time runs out. The Green Bay RAP is considered the best RAP, as I have said, that anyone has written so far, and it is in fact the only RAP that is completely done here in Wisconsin. If the Green Bay RAP was written in about 2 years, why do you imagine the other Wisconsin RAP's are taking so much longer to get finished?

Ms. **Leighton**. I think the DNR put all their eggs in one basket in Green Bay. I think they admitted that to us at the time that they were going to try to do Green Bay first to see how the process worked. And it worked pretty well, but it took a lot more effort than I think many expected. So there has been, I think, a little drawing back from getting that involved again with the plan. It was very complex and took longer than they expected so we have not seen that level of input in other areas. Also there has not been the EPA support for staff people in other areas that we had in Green Bay. That is a clear problem.

Senator **Kohl**. Dr. Harris?

Dr. **Harris**. I guess I have a different perspective on that. I think it happened because it was preceded in part by 10 years of intensive research through Sea Grant efforts, and I do not say that because I was a part of it, but I think it is a fact. It laid a base. In addition to that, the program initiated various kinds of public activities before that—the wheel was turning. Various players had been previously identified, and so there was some groundwork. I think those kinds of things are terribly important to move things along because you are not starting at ground zero—you are hitting the ground running, and in this case that facilitated the process, there was something going on. I think that is possible in other areas of concerns as well. It takes some kind of a priming of the pump, pre-initiatives. I quite frankly believe that universities should be playing a larger role in many of these than they are because in part it is an educational kind of issue as well as a research issue. I think that marriage perhaps had already been made and provided some initiative.

Senator **KOHL**. Mr. Schneider?

Mr. **SCHNEIDER**. I concur with Dr. Harris. I think one of the major benefits that we have is the availability of the work that Sea Grant had done, and all the other research that had been done within the Fox River prior to development of the RAP. A lot of the problem work was done, and it took a lot of involvement from the people at the university, industry, DNR, citizens and so on, a lot of time and effort was put into it, but the groundwork was already laid by the work that was done by these other groups.

Senator **KOHL**. Okay. Any comment you would like to make before we go onto the next panel?

Dr. **HARRIS**. Well, the one thing that is clear about this whole toxic issue is that once these chemicals are loose in the environment, they are for the most part unmanageable. I think we can see that and looking towards the future we need—Don has already mentioned activities, we need to look at input management. We cannot deal with them at the moment, in any realistic fashion, the way things are now. We have got to proceed, to go ahead and cleanup those mistakes, but clearly in the future we have to be looking toward sustainability and not allowing that to happen.

Senator **KOHL**. Okay. I thank you, all three of you. I think you have been very, very helpful and express yourselves extremely well. Thank you so much.

Ms. **LEIGHTON**. Thank you.

Dr. **HARRIS**. Thank you.

Mr. **SCHNEIDER**. Thank you.

Senator **KOHL**. Mr. Werner Krause is the vice-president of a company called Vinyl Plastics in Sheboygan. And Mr. Krause is cochairman of the citizens advisory committee for the Sheboygan RAP.

Dr. Wendel Johnson is a professor at the University of Wisconsin's Marinette Campus. He has conducted a great deal of ecological research in the Menominee River, and he is a member of the Citizens Advisory Committee for the development of the Menominee River RAP.

And Mr. George Rogers is an employee of the Ansul Corporation in Marinette and is also a member of the Citizens Advisory Committee for the Menominee River RAP. Your statements, gentlemen. Mr. Krause.

TESTIMONY OF WERNER KRAUSE, VICE-PRESIDENT, VINYL PLASTICS, SHEBOYGAN, WI, COCHAIRMAN, CITIZENS ADVISORY COMMITTEE, SHEBOYGAN RAP [1]

Mr. **KRAUSE**. The community of Sheboygan would like to thank the Senator for inviting us to make our comments here this morning.

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[1] See p. 242 for Mr. Krause's prepared statement.

Unlike some of the other areas that we have heard about, including Green Bay, Sheboygan is a bit unique in that our problem is only twofold. One of those being an in-place pollutant, PCB's, with an identified potentially responsible party, and outside of the defined area of concern, non-point source pollution. These problems have been there for many, many years, have stopped economic development in our lakefront area and are affecting, today, the commercial shipping in the Sheboygan River. It is interesting that this topic and hearing should come up now particularly in light of releases that have come out of EPA about the work that is being done in our community.

Our task force is a unique group. It was brought together by a gentleman who is recognized as a conservationist and sportsman throughout Wisconsin. In his vision he put together a group made up of environmentalists, sportsmen and business people, recognizing the complexity of an ecosystem in that it not only involves the environment, but also involves the economic well-being and health of the community as well.

For over 10 years, this environmental problem has had a hold on economic development in our community. Our task force has only been working on the problem for about 4 years. The first effort was to gain background information. We found that we readily and quickly filled up over two file cabinets of background information from various agencies re: study upon study upon study upon research. With two file cabinets of information we felt we were pretty well equipped to start attacking that problem. As we proceeded we became designated as an area of concern by the IJC and wound up not only with one Superfund site in our community but two. One in the waterways itself, and one in an industrial landfill adjacent to these waterways.

The site that is receiving the most attention is the waterway contaminant problem which I said earlier was PCB. It is interesting to note however that within the last month several Federal and State agencies have determined that a major portion of the Sheboygan outer harbor is indeed not seriously contaminated with either PCB's or heavy metals and subsequent testing through a lab approved by the Wisconsin Department of Natural Resources confirmed that fact. (That testing was done within the last 30 days). Dredging is now proceeding on a limited area in a private facility in the Sheboygan Harbor.

It is amazing how hindsight clarifies one's vision as to what contaminants really are or are not there. Unfortunately, we do have contaminants in other areas, that being our river, and some upper areas of the river which are outside of the area of concern, but are included as part of the Superfund site. Interestingly enough last Thursday EPA announced the tentative agreement with the PRP involving the Sheboygan area of concern for a partial remediation of the polluted areas, specifically numerous highly contaminant areas—PCB contaminants—in the Sheboygan River that are a suspected source of the water problem and pollutants. This work is designated, from talking to some of the PRP representatives, to be started and potentially completed by this fall.

Of course, this work will involve the cooperation of all the agencies, both State and Federal, for it to proceed. This announcement by the way, came as a complete surprise to the community and to our task force, particularly since for the past year our task force has been requesting that EPA come into Sheboygan and update us on the status of the Superfund project. They have indicated that they were in sensitive negotiations, and as you, Senator, I understand what sensitive negotiations are, and the need for non-public disclosure during those very sensitive periods. However, we do not think that we have ever betrayed any confidences of prior discussions to warrent EPA's non-communication. We would have appreciated a bit more communication from them.

Let me change my comments for a minute to the RAP and some of the comments and questions you made before. It is interesting that our Remedial Action Plan document has not been yet submitted. However, we have gone through the community process. We were contacted more than eighteen months ago by the Wisconsin Department of Natural Resources asking that we cooperate with them in preparation of the Remedial Action Plan, and to act as their principal citizens advisory group. We worked with those authors from the Wisconsin Department of Natural Resources in constructing the first drafts and indeed supplying them with much of the technical data out of our files that we had gathered over the years.

Our technical advisor attended several interagency review meetings where EPA staff was present. We, the task force and WDNR formed a blue ribbon committee from various sectors of the community to review the final draft of that RAP and to write the RAP summary. Over 2,500 copies of the summary were distributed throughout our community. We held numerous public review meetings and did receive some public input. It was discouraging to us, as a side comment, that we did not get more participation from the public.

However, it is interesting to note that our pollutant problem has been aired in our local media and has been disseminated throughout the public domain, if you will, in our community for almost 15 years now, 10 to 15 years. We may well have reached a saturation point, and we pretty well know what the problem is. We have disseminated all of these plan summaries throughout the community.

What is interesting, however, is that EPA had not participated in any of the cost sharing nor reimbursed us for any of our costs. Our group does employ a technical director who is a certified environmental engineer. Much of his time is contributions in kind. We operate our committee on a budget of $25,000 a year, and in fact part of that is from State grants. Every year we turn back part of State grant monies because we believe in operating on a balanced or surplus budget and strive to do that by spending the monies only where they are going to have some positive impact. I might add we are a bottom-line oriented type organization. We are looking to get this thing cleaned out. Not to study the living daylights out of it. In our opinion, and that is the task force's opinion, we think the Sheboygan RAP is a fine document. We also believe it is incomplete and it is approximately 6 months premature. We have taken this position, we have publicly stated it, have written a report, and requested that our opinions be included in the Remedial Action Plan document. We have taken this position due to the fact that the Superfund PRP Remedial Action Feasibility Study was not yet completed at the time of the preparation of the RAP.

Furthermore, the Priority Watershed Study that is going on in the upper regions of that watershed is underway right now, and the report is due out in the fall of 1989. These two very important pieces of work will give us the guidance to adapt the plan that is based on recent, factual information as well as the ability to assess the potential costs to all the parties concerned.

Throughout the past years our contact with EPA has been mixed with flashes of brilliance, driven by an obvious sense of urgency and open communication, while at other times it seems to us that EPA considered Sheboygan an outpost on the far side of the moon. Their consistency of effort is what is lacking. I have no concern about the ability of the people, and they are funded. After all SARA did provide EPA with $8.4 billion of funds coming from hydrocarbon, raw materials. I think they (EPA) have the resources. It is a matter of directing those resources where they can be most effective to remove the bulk of the contaminates, to remove the bulk of the threats to the populous.

We in Sheboygan are looking forward to our cleanup which we hope will get underway this summer. Today the Corps of Engineers will not dredge our shipping channel. Last year we routed over 300,000 tons of bulk traffic. The water levels were up 2 years ago. They came down last year. They are lower now. Today the company that does all of the freight trafficking, C Rice Coal Company, is now paying for dead traffic because the ships can only be loaded 50 percent due to the draft problem in our river. We need that dredging. The Corps of Engineers by the way are—I share some of the concerns of earlier comments, in that the Corps of Engineers I think needs a little more boosting up than perhaps even the EPA does in getting on with things.

They have been studying the dredge problem for 2½ years without any resolution. Last week they indicated that they had completed their first phase study; but now they were going to explore it some more and do more studies. In the meantime we cannot get traffic in and out of the harbor and the community is suffering economically.

The basic goals of our task force is to conclude this round of studies. What we are looking for is an opportunity for our community to participate in some of the economic development that is happening on the lakefronts around the country. We have been stopped; simply because EPA, Wisconsin DNR, said you cannot touch any of the lake bottom or river bottom because of the pollutants. Obviously earlier in my comments I have said that today they say there are no pollutants that they said were there 15 years ago. I do not think heavy metals get up and walk away and disappear. We need some consistency. I think most importantly one of the things that drives our group, although we are concerned bottom liners and want to get on with the cleanup, one of our concerns is to leave an inheritance if you will to the future generation, and that we have clean waters, that we can eat the fish, and that we can eat the water fowl. We have advisories not only on fish in our area but also on water fowl that migrate through the area. We need to clean up this mess so we leave an inheritance for future generations to use those waters, to use those natural resources without fear of personal injury from the pollutants and contaminants. Our goal is get on with the cleanup, even if we can only accomplish, with today's technology, removal of 95 percent of that risk to our populous, let us do it now. We will catch the next 5 percent in the next 20 or 25 years as technology developments, but let us do what we can with the technology and resources available today to remove the bulk of that risk.

Senator KOHL. Thank you. Dr. Johnson.

Dr. JOHNSON. Senator Kohl with your permission I would like to pass the microphone to George Rogers who will read our joint statement and then I would like to make some comments after that.

Senator KOHL. Fine.

TESTIMONY OF WENDEL JOHNSON, PH.D., PROFESSOR, UNIVERSITY OF WISCONSIN-MARINETTE, MEMBER, CITIZENS ADVISORY COMMITTEE, MENOMINEE RIVER RAP;[1] AND GEORGE ROGERS, ENVIRONMENTAL CONTROL MANAGER, ANSUL CORP., MEMBER, CITIZENS ADVISORY COMMITTEE, MENOMINEE RIVER RAP

Mr. ROGERS. Thank you. First of all Senator, we are very grateful to hear the announcement that the EPA has released the $48,800 grant for a staffer for the Wisconsin Department of Natural Resources for our remedial action plan development. WDNR staff has been doing an absolute [inaudible] labor in this work and these monies will allow us to get a full-timer involved in the thing, and this is going to help an awful lot.

I will now start my prepared comments. Good morning. My name is George Rogers. I am a resident of Menominee, Michigan and employed as the Environmental Control Manager at Ansul Fire Protection in Marinette, Wisconsin. With me is Dr. Wendel Johnson, a resident of Marinette, and a professor of Biology at the University of Wisconsin Center in Marinette. Dr. Johnson and I both serve on the Citizens Advisory Committee and the Technical Advisory Committee for the Menominee River Remedial Action Plan. We both appreciate this opportunity to inform the Subcommittee and Senator Kohl of the progress of the Remedial Action Plan.

The area of concern being addressed consists of the Menominee River which forms the border between Northeastern Wisconsin and Michigan's Upper Peninsula, from the mouth on the west coast of the Bay of Green Bay upstream to the second Scott Paper Dam in Marinette, a distance of approximately three miles. The area of concern also extends north and south along the Green Bay coastline for a distance of three miles in both directions. The area of concern encompasses the entire river and bay frontage of both Menominee and Marinette. The river frontage in the two cities is mainly commercial, industrial, and residential. The river drainage upstream of the area of concern that is above the second Scott dam is mainly forested with some agricultural lands.

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[1] See p. 244 for Dr. Johnson's prepared statement.

The water quality in the area of concern is generally good. Some historical pollution problems with heavy metals such as cadmium and arsenic have been noted in the river water. This situation has greatly improved with the imposition of the Clean Water Act and its resultant discharge limitations. Both cities enjoy high quality drinking water taken from a combined intake within the Green Bay portion of the area of concern. The fishing in the river and the bay is very good. Several charter fishing businesses have evolved over the last several seasons to pursue trout and salmon on Green Bay. Sportfish in the river itself include small-mouth bass, large-mouth bass, smelt, catfish, trout and salmon. Every spring the river portion of the area of concern supports a major walleye spawning run. The fish caught in the river are safe to eat within limits, although the Lake Michigan fish consumption advisories for PCB's and other substances apply up to the first Scott Paper dam. Senator, this is what we showed the previous panel.

Commercial fishermen operate out of Marinette. Fish habitat in the lower river portion of the area of concern is somewhat impaired. Historically, there were extensive wetlands along and at the mouth of the river. These were pretty well filled in by the early 20th century, and critically few wetlands remain in the area of concern.

The community as a whole has expressed some concerns regarding access to the lower river in the area of concern and also for deteriorated aesthetics in the same area. This portion of the shoreline is mainly industrial. Access to the bay portion of the area of concern is very good. The Bay shoreline consists of parks, beaches, marinas, boat ramps, restaurants, motels and a State natural area adjacent to Marinette's Red Arrow Park.

Industry in the area of concern consists of two papermills, a shipbuilder, transportation warehousing, and manufacturers of fire protection equipment, metal furniture, and specialty chemicals.

The area of concern has been identified as such by the International Joint Great Lakes Commission because of in-place sediment contamination generally limited to a 10 to 12 acre sidewater below the Ansul plant on the Wisconsin side of the river. This area is known as the turning basin. The Corps of Engineers data shows sediments in the turning basin are contaminated with arsenic, cadmium, oil and grease and mercury. River channel sediments that is immediately outside of the turning basin are less polluted, and the river channel but not the turning basin is regularly dredged, most recently in 1982. This occurrence of contaminants is due to past industrial practices and the unique nature of the turning basin as a natural sediment trap.

Remedial Action Plan development began on June 15, 1988 with a public meeting. A draft scope of work was presented and the public opinion solicited. Citizens were asked to rank problems and objectives for the plan development. The primary problem identified by the public and the Twin Cities was contaminated sediments. The primary objective identified by the public was the protection of our high quality drinking water and the second most important objective identified was the elimination of any impacts of arsenic on the river. In October of 1988, a Citizens Advisory Committee was formed to advise the Wisconsin DNR, the lead agency in this process, on plan formation. The Citizens Advisory Committee is a very diverse group of 23 Wisconsin and Michigan residents with industrial, environmental, recreational, academic, and regulatory interests. We also have some members who are simply interested citizens. In January of 1989 the committee produced a statement of the desired future state of the area of concern. Dr. Johnson and I have attached a copy of that to the handout. In October of 1988, a Technical Advisory Committee was formed to review the extensive data base available for the river, identify areas where further data is required, and eventually to recommend appropriate remedial measures.

The Technical Advisory Committee consists mostly of Wisconsin DNR and Michigan DNR staff with help from the U.S. Fish and Wildlife Service and other agencies. Dr. Johnson and I also serve on the Technical Advisory Committee. The Technical Advisory Committee will be gathering additional information on the river this summer and additional funds for these activities may be required.

The Menominee RAP is a community effort. Despite the diversity of interests on the Committee, there has been very little conflict between, for example, environmentalists and industrialists. We are a small community, and basically we are all neighbors. We all know each other. This enables us to focus on problems within the local perspectives. The plan is scheduled to be published in the fall of 1989, but WDNR has asked USEPA for an extension. My notes say to July of 1990. The handout shows it differently. I believe it shows December of 1989. The Citizens Advisory Committee feels that the original schedule was unrealistic, and supports WDNR's request.

USEPA's involvement on the local level has been minimal to non-existent, and we will defer to WDNR spokespeople regarding details of the state-federal relationship in the next panel. It is important to note however that 41 of the 42 areas of concern in the Great Lakes including ours are listed because of in-place sediment contamination. Proper solution of the national problem of sediment contamination will not occur until a National Contaminated Sediment Management Program of some sort is developed. This was eloquently expressed by Becky Leighton, who by the way also serves on our Citizens Advisory Committee. Remedial Action Plans do not lead to remedial actions without resources and funds. State and local agencies are already stretched to their limits implementing their own environmental programs, many of them mandated by USEPA. Funds and resources should be available from the Federal Government to develop and conduct the monitoring and remedial actions involved.

In closing the citizens of our communities expect an ecosystem approach to this process, and a river and bay that will be a focus of our developing tourism industry, will provide an edible sport fish population and will also maintain an enhanced critical ecological systems. We wish to have all of this with a healthy river-based economy, including a transportation network capable of handling Great Lakes and even international shipping in an environmentally acceptable manner.

That ends our prepared comments but Dr. Johnson has a statement.

Senator KOHL. Go ahead Dr. Johnson.

Dr. JOHNSON. I have several additional comments to supplement the joint testimony, and these items are not necessarily in a priority listing, but I think it should be considered in light of this hearing.

Yesterday an associated press survey found that 75 percent of the people polled said that the U.S. pollution laws were too weak. A majority favored urgent government action to protect the Nation's drinking water. There was a perception that environmental pollution was on the rise, and that government and businesses were not doing enough to combat it. The highest environmental priority was with toxic waste.

Secondly, I would like to say that I think the public is looking for a very strong statement by the Federal Government, hopefully in this case the EPA, to indicate its concern about environmental degradation. We are all very painfully aware of the austere times the EPA has had during the last administration. A dynamic and visual role by the EPA is important to reestablish their credibility and to encourage public confidence in this remedial action planning process. It is crucial that funds are readily available and sufficient for needed research and plan development. It is also imperative that a broad ecosystem approach be followed as this international effort develops. Our problems on Menominee River are relatively simple in terms of the ones that you already heard from today, but nonetheless we still have to follow within a framework. We must be proactive rather than reactive in our efforts to deal with these areas of concern. If this task is worth the time of the many individuals from our communities, it is worth doing well.

In many cases we do not have to reinvent the wheel. In some cases good legislation is already on the books and has been mentioned by previous panelists. We just need to enforce it more rigorously. I think I will stop at this point. A few more things, maybe we can develop in our questions.

Senator KOHL. Okay. Is there a time in your own mind with respect to Sheboygan and Menominee that the RAP will be completed and in place?

Mr. KRAUSE. Quite frankly, Senator, I do not think a Remedial Action Plan, if it is going to be a living working document, will ever be done until the environmental issues are cleaned up. As technology comes forward, as it is developed, and it will, those Remedial Action Plans will have to be constantly updated and monitored.

Our Remedial Action Plan is based on the information available today has been turned back to WDNR. Our public commentary period was over at the beginning of May. I was surprised to see the date of October or December of 1989 as the submittal date. We were led to believe it would be submitted to the IJC some time in June or July. So, that date is new information to us, talking about communications again. I do not think those documents will ever be complete because I think they must be living dynamic documents that take advantage of the most current evolution of technology.

Senator KOHL. Mr. Rogers?

Mr. ROGERS. Our Remedial Action Plan is very much in an embryonic state compared certainly to Green Bay's and even Sheboygan's, I think. As Becky Leighton and Wendel said we do not have the environmental problems that some of the rest of these areas of concern do. I am confident and I think Wendel is confident that we were making progress in Menominee. The Technical Advisory Committee has been hampered by the lack of somebody to sit down and put the paper together. We now have that problem solved. I came here prepared to plead for the grant and the grant has been given. There goes a lot of my comments.

I am happy with the community response that we have. We have a lot of community interest in this thing. It is not waning. It is not flagging. I think community response alone, Senator, is going to keep us on the straight and arrow, keep us moving along toward a usable RAP. Eventually we will on the Technical Advisory Committee come up with some kind of remedial actions and right now we could not tell you what those are going to be.

I heard Becky say Green Bay has 130 individual remedial acts. I do not think we will have that number. I think probably a lot of the implementing of the plan is going to come about with the solution, the national problem of in-place sediment disposal. I am satisfied with the movement that our plans have made.

Senator KOHL. Okay. Dr. Johnson?

Dr. JOHNSON. Yes, I would like to bring up just one other point that shows the importance of the federal role in this whole Remedial Action Plan. And it is a good example in our case because we are a boundary river and so as we sit down to develop our Remedial Action Plan, there are some of us in Michigan, some of us in Wisconsin, and the laws vary in different places. The history of how we handle the river situation has varied. And it makes it quite difficult if we try to do it at the State level or any level less than the Federal level, where we can have a standard uniform plan that the states all know about and agree upon and can impose. And without that it is really very confusing and although our problems are less than some of the other situations, our geography is basically a problem, as we try to deal with our situation. Again, I would say it is very important that the EPA show us some direction, they show us some guidance, they help in the coordination, and they help in the objectivity as we develop this Remedial Action Plan. We need their presence there and so far we have not had very much.

Senator KOHL. So you are saying that in order to get the plan completed and implemented it is very important that you have direction, input, guidance, advice, counsel, involvement from the EPA?

Dr. JOHNSON. Yes, sir. I think many of the people who, for example, are on our Citizens Advisory Committee really know nothing at all about what the EPA is or where they are or who they are. They are out there somewhere. There are three letters that stand for their organizations and some of us do realize the great importance of this agency and things it has done, but if they would have more direct input into our program I think that would be an encouragement to the people in general. They would see it simply not as distant government, but as partners in solving this problem.

Senator KOHL. Which you expect to have now that you have your grant and the person connected with the grant?

Mr. ROGERS. May I make a statement?

Senator KOHL. Yes, go ahead, Mr. Rogers.

Mr. ROGERS. As Wendel said, Senator, we have two State agencies involved in this thing. Michigan DNR and the Wisconsin DNR. The Wisconsin Department of Natural Resource is the lead agency in this. I would rather not see anymore agencies in this competing for primacy in this thing. I would like to see my personal opinion, EPA, support Wisconsin Department of Natural Resources. I think the Department of Natural Resources has been doing a very good job for us with very limited funds, and I was very happy to hear your announcement this morning.

Senator KOHL. Okay. Mr. Krause, I am a bottom-line guy just like you are. How do we get in business on the 95 percent that you say we are in a position to get moving on and worry about the other 5 percent after that?

Mr. KRAUSE. One of the things we see in Sheboygan, and we are unique as compared to Menominee or Green Bay, is that we have basically an identifiable single source of contaminant which is the primary problem. That is very helpful. The other element that is also very helpful, is that the company we are dealing with is the epitome, in my opinion of responsible corporate citizenry. They have come forward and have said, yeah, we screwed up, we did things 25 years ago that were state of the art that were accepted in our society, but with hindsight that was the wrong thing to do, and we are going to step forward and we are going to help solve this problem. You cannot ask for much more than that. They have already put over $1 million into this project and have not removed 1 pound of contaminated sediment at this point. What is frustrating for all of us is that those folks wanted to get on with this project years ago, and it was a result of the agencies, State and Federal, saying let us study, let us study, let us study, that have held us up. Some of the proposals I heard 2, 3 years ago from the PRP's is exactly what we are doing today. Obviously we do not know all of the answers. Research funds need to be made available. Dr. Zanzoni from the State University in Madison, University of Wisconsin-Madison, toxicology group, is doing some work in Sheboygan on PCB, bio and aeromatic degradation; I think those kinds of projects need to be fostered, I think they need to be nurtured.

Funding: the EPA announced several years ago with SARA that there were demonstration project grants available. The hoops one must go through to get one of those demonstration grants is unbelievable. We looked into it. We wanted to try to get GE or someone else who was involved in technology to come and look at Sheboygan. We walked away from it. It was just far, far too complicated. We need to make those kinds of funds that are there today, those commitments, easily accessible to the private sector to start doing some of these demonstration projects. We need to start giving them opportunities to develop this technology, and see if it works. If we are going to sit back and say we are not going to touch pound one of contaminated sediment until we have a 110 percent solution to the problem, we are going to be limiting severely the evolution of technology. We are going to have to take some risk like Ben Franklin did in flying his kite in the lightning to learn about electricity. We are going to have to take some of that same risk to learn how to deal with these very important issues, and I cannot urge enough that we start taking the normal risk that business people I think are more attune to than perhaps some of the people in our other sectors of our society. Let us get out there and do it is the real message.

Senator KOHL. Any other comments gentlemen? The project will start next month. Can you fill us in on it?

Mr. KRAUSE. That is one of the areas we are trying to get communication back from EPA. This project was put together with EPA and one of the PRP's, and we said please come talk to us. For some reason EPA has done a community shutdown on communications. Why, I do not know. I know they have a community public relations director on board assigned to our area of concern. We have had a difficult time getting them to come and talk to us. Just exactly why I do not know. Perhaps it is that when they have showed up in town we as a citizens group and many individual citizens have been very vocal and outspoken about the lack of progress, as perceived by the community, in moving forward with this entire area. Perhaps they have been burnt once too often and we have not been gentle enough with them. I do not know quite what the problem is, but we sure would like to have them talk to us. We usually turn out a pretty good group to listen to them because usually when they do come in, they have a good solid message. We just need more frequency. I think we are hearing that throughout the day. We need more visibility and more frequency by those people. By and large when you get to know them, they are fine folks, and they know what they are doing, and we have no problem with that. We just need more attention and a greater sense of urgency. A little more hustle as Tom Peters would put it.

Senator KOHL. Okay. Dr. Johnson, you would like to say something?

Dr. JOHNSON. I have one more set of comments I would like to briefly mention. As we are looking at some of our concerns, I notice in your letter that we were talking about social concerns and we are talking about economic concerns, but I think one of the underlying ways of looking at some of these problems we are talking about today are the basic environmental or ecological concerns. Those are concerns of basic natural systems that do not change from year to year, that do not—that are not based on immediate local contingencies but part of natural systems perceived throughout the world, and we really do not know all we need to know about those systems. I would agree that we need to get on to do some things to get some concrete results, but we do need research in concern cases, and we do need a better understanding of some of these natural systems. More than anything we needed acknowledgment of them. We need to be able to say that despite the social implications, the economic implications, there are just basic environmental systems there at work and that are part of our biosphere. If we ignore those or get those second or third priority, we are still in the same problem. I would like to thank you for the opportunity.

Senator KOHL. Thank you for coming. Our third panel will consist of Mr. Lyman Wible, the administrator of the Division of Environmental Quality in the Wisconsin DNR. And our other panelist is Mr. Tom Cuene, who is the Brown County Executive. Welcome gentlemen. I am very pleased to have you here. I appreciate you coming in, and Mr. Wible, would you like to make a statement?

TESTIMONY OF LYMAN WIBLE, ADMINISTRATOR, DIVISION OF ENVIRONMENTAL QUALITY, WISCONSIN DEPARTMENT OF NATURAL RESOURCES [1]

Mr. Wible. Yes, sir. Thank you, Senator, for the opportunity to participate today, and thank you for raising public awareness of these issues. For the record, I would like to note that I will be highlighting some points which are addressed in my prepared statement rather than following the statement as such. Much has been said already about the improvement in the Great Lakes and your own statement identified and recognized the improvements which have occurred in Lake Michigan as well as some of the problems which we still face. I would jump over that part of my prepared statement in the interest of time, and I can come back to that if we want to talk about this, and move onto why some of those improvements have occurred.

Part of the success in the Great Lakes is a result of improvements through partnership. A good deal of the discussion today has dealt with the delegation relationship between the Federal Government and the state government, and in a sense the delegation relationship between the state agencies and local government, and the cooperation with industry as well. It is important to remember that EPA does not have—and I doubt that they ever will have—sufficient staff and certainly not enough detailed knowledge to implement all of the programs which Congress has given them and to implement those programs successfully at the local level. For that reason they do work through local units of Government. There is a long record of success. It is a far better record in the water pollution control program, for example, than in the Superfund program. And you have just heard some discussion about that difficulty of access to a centralized program as Congress has in fact set that up. I acknowledge that was before your tenure, Senator. So there is a difference between the way these various programs work. However, you have heard a good argument why integration of these programs at the local level makes a lot of sense.

The history of success includes for example in Wisconsin a high level of compliance. Ninety-four percent of the municipalities and 98 percent of the industrial dischargers are in compliance with their conventional pollutant limitations in their discharge permits. That is an example of the success. The problems we face today as noted are the problems of toxics from contaminated sediments, toxics from existing discharges, historic discharges, toxics from airborne deposition and toxics from non-point pollution control. We also face problems of exotic species prevention and control. Matters like that, we check, and I think we ought not to go into in detail.

I think that with regard to the health and status of Lake Michigan, EPA has played an important role, but again I cannot over emphasize the importance of some national program to manage and handle contaminated sediment problems. Specifically in the Green Bay Remedial Action Plan the alternatives range from $100 million to $600 million under conventional wisdom about how you handle contaminated sediments. That kind of a bill, spread on a national scale, simply is not something the country is going to be able to afford. There has to be some rational approach. We are not talking about a cost benefit approach either. We have to attain the objectives of the Remedial Action Plan, and the objectives for the environment, but we have to do so in a cost effective way. We are convinced in Wisconsin DNR that with additional investment in resource and studies and development of new technology—the kind of innovation and risk taking we heard spoken about a moment ago—that there are ways to do these things.

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[1] See p. 249 for Mr. Wible's prepared statement.

Another important point in terms of the role of the EPA is the management of airborne depositions. Someone mentioned that airborne deposition of toxics currently is addressed by only seven toxic substances under the air pollution control regulations and federal law. In Wisconsin we have a State air pollution control program which calls for regulation of 495 toxic substances, and when that is liberated from the current court suit, takes effect, and is implemented we can bring to bear some regulation of toxics which fall onto the Great Lakes. But other States do not have this authority. It is not called for by Federal air law or Federal water law. We need the support, for example, of Congress to make that logical tie, to build that bridge between the Clean Air Act amendments now being considered and the deposition on the Great Lakes. And I submit that when that discussion begins in Congress it will not stop at the Great Lakes: the Chesapeake Bay, San Francisco Bay, any other body of water with any substantial contamination problem will want to talk about that problem. I think that is a very important problem and that a Federal role, by EPA and Congress both, is an important one in that regard. There is an important federal role in coordination of point-source discharges. We have Section 319 for the non-point source discharge control of the Clean Water Act and we need Federal support for that, and we need some Federal leadership in that.

Non-point pollution control is sometimes referred to as the Rodney Dangerfield of pollution control. It is a program which "gets no respect" as they say. However, in Wisconsin through a State program we have been able to demonstrate a model for the national program. We have been able to demonstrate by the expenditure of about $28 million, how the non-point pollution control can be effected. It can work in urban areas, it can work in rural areas. It is a very important element of a comprehensive pollution control program.

There is also a need for coordination of EPA's actions. You have heard some talk about that already. You have, for example, since 1987 a surface water integration work group established by EPA Region V in order to coordinate the implementation of that 1987 international agreement. You have in EPA a sediment task force established in December 1988, the so-called Assessment and Remediation of Contaminated Sediments. That is again at a regional level. You have in EPA headquarters, a sediment criteria work group. You have in EPA, a developing policy on national coastal management being done in 1989. The list could go on and on, but if these efforts can be focused and integrated to work towards Great Lakes cleanup, we can be far more effective, and EPA can be far more effective.

The second point I was asked to address is the Lake Michigan Toxic Pollutant Control Reduction Strategy. Under this program EPA is coordinating existing initiatives and recognizes again the importance of the state role in the water programs in the delegated program. We think that EPA's efforts here set the stage for a lakewide management plan which can evaluate the effectiveness of existing programs. It can set the stage for changes in those problems, and we can move forward to accomplish everything that the international agreement calls for with regard to the cleanup of the lakes. To start this process, EPA has sponsored two efforts. One: the surface water integration work group I just mentioned has met. They have talked about how these whole lake management plans ought to work. They have talked about the notion of "top-down" versus "bottoms-up" planning, the kind of thing we have been talking about here in the Remedial Action Plans. Secondly, there was a regional prototype developed by an EPA consultant, a prototype for a whole lake management plan—a lakewide management plan. That prototype then was made available for regional training, if you will, by EPA for EPA or the states. We think that prototype is useful as a basis for discussion, but it obviously does not cut the mustard yet.

With regard to EPA's assistance to Wisconsin in developing and implementing Remedial Action Plans, beyond construction grants which is hundreds of millions of dollars a year, beyond Superfund, beyond non-point pollution control and air management, there are some things EPA has done specific to preparing and implementing Remedial Action Plans. In Green Bay, EPA has provided some funding for staff support, about 1½ staff years. The Department of Natural Resources put in about 6 staff years, and that involved 25—maybe as many as 40—different staff members, so it is a very expansive program and it requires a lot of effort, but EPA gave us the catalytic amount of staff that can really make this a spark plug to make this happen in terms of our ability to contribute to the local development of the plan.

I do not want to overstate our contribution to this plan. People have been very kind today about what the state did, but the Green Bay Remedial Action Plan has been developed and has worked because of local interest, because of the assistance and support of government and industry and citizens and environmental groups. And we have been able to help and been happy to have a part in it. But it is really building on the kind of community that Green Bay is with regard to this problem. That is an aside.

With regard to Sheboygan, which does go to—that Remedial Action Plan should go to printing in about another month or so. EPA has provided a technical advisory staff support to us and made it possible for us to provide people, again about one full time equivalent position in that project, and of course you have mentioned and we are all very pleased to hear and gratified about the announcement of grants for the Marinette and the Milwaukee Remedial Action Plans.

We should also not pass over the fact that many implementation activities are already under way. $1.2 billion in Milwaukee for the pollution abatement program, $57 million I think is the number roughly in Green Bay, the first phase in the facilities plan. There is lots of money being spent already to clean up these areas, and I acknowledge your point about "this is only planning" that is behind schedule. At the same time there are a number of activities going forward in parallel, and they are recognized in the Remedial Action Plans for their value and their contribution to the cleanup of the lakes, and areas of concern.

Since I am approaching the end of my time, I am jumping ahead, Senator, and point out under "problems for the implementation", that we need a continued commitment to these plans, as others have said—a commitment of staff, a commitment of money, a commitment of time and a commitment of a willingness to develop programs like the in-place pollutant, contaminated sediment program. We also need a continued political will to support these programs and their implementation because there will be difficult trade-offs. I would also note the need to commit to public participation on a continuing basis. In our experience, this is either pay me now or pay me later. If you do not ask people up front what their thoughts are, and what they think ought to happen, you are going to hear about it later anyhow, so it is better to do this public participation up front. But we have clearly learned in the Remedial Action Plan and process, it takes time and it costs money.

With regard to EPA's contributions to the development of uniform water quality standards, in other words, all the Great Lake states having some uniformity in their water quality standards, I would note the following. There exists Federal guidance, national guidance for water quality standards. That guidance has been very useful in establishing the first phase, the first stage, if you will, the basic authorities to regulate toxic substances. Our state is the first to promulgate water quality standards to address toxics since the 1987 Federal law which mandates that. Many States do not have the basic authority. As some of your charts in the testimony material earlier mentioned, that is an important first step. However, it is not enough and EPA has offered its availability, its willingness, its support to bring together the States to talk through the consistency question, to develop a uniform—I should say compatible, we are not mandating each state do exactly the same thing because the statutory bases and the language can be a little different—but a compatible approach to the water quality standards promulgation and to how you apply those hazards to the discharge limitations you impose on individual dischargers. So EPA has, I think, offered its help here and that will be a very important feature in attaining that sort of uniformity.

In summary I think great progress has been made on the Great Lakes. In summary, I think there is a great deal more to do. In summary, I think the solutions are major programs which need staff, they need money, they need continued political commitment. They also will require as I say the political will to face trade-offs. The EPA has to, I think, either provide some resources or liberate some resources from other activities. We cannot sustain in the inland waters of Wisconsin the kind of efforts that our constituents, the EPA, the legislature, and others want and still direct a high proportion of our resources to the Great Lakes. There are issues like water quality standards for wetlands. There are issues like disinfecton policies. There are issues like reissuance of minor permits or sewage treatment plants, other activities which EPA expects us to do, and they still want us to pursue this international agreement implementation. We have fixed resources even with the modest increases which come from year to year with some luck, and we have had some luck at that. We are still talking about basically four hundred people to run the entire pollution control program in the State of Wisconsin, and other states are in some cases not even that lucky.

So I think that with the continued support and the assistance of the EPA, its recognition of the contributions that state agencies, local citizen groups, companies, and environmental groups can make that we have a good chance for success. In the long run I understand and acknowledge that the delays are concerning to everyone involved. But with that, and with the support of Congress we think there is good cause to be hopeful and even optimistic about the long-term future about the Great Lakes and what it holds for Wisconsin and other State's citizens of the Great Lakes basically.

Senator KOHL. Thank you, Mr. Wible. Mr. Cuene?

TESTIMONY OF THOMAS CUENE, BROWN COUNTY EXECUTIVE [1]

Mr. CUENE. Thank you, Senator. On behalf of the Brown County community, I would like to welcome you and to thank you for selecting Green Bay as a site for holding this particular hearing. I do feel it is extremely appropriate that Green Bay be chosen, as the people of this community have shown a rekindled spirit and interest in the rehabilitation of our water resources over the last several years. A little bit about where I am coming from with regard to this particular issue of Great Lakes and pollution.

I have been directly involved in water quality issues for the past 2½ years, coming in on basically the tail end in the formulation of the Green Bay Remedial Action Plan but involved with the implementation portion of it since its inception. I do not bring a great deal of technical expertise with me regarding environmental issues. What I do bring is a little bit of historical perspective having grown up here, lived my entire life in this community, and having spent the better part of my life plying the waters of Green Bay as an avid sailor and fisherman. I have seen some remarkable changes taking place since I was a youngster and we are continuing to make progress. What I would like to do is just take a few minutes to dwell a little bit about the importance that water has to this particular community. We really are here today in Green Bay as a result of our water resources.

The Fox River and Lower Green Bay and with them the access that was attained to Lake Michigan and points beyond is really why we have Green Bay at this location, the city at this location. It really has shaped the development of not only Green Bay but the entire Fox River Valley. The paper industry which is the back bone of the Fox River Valley was originally attracted to this area by its water resources.

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[1] See p. 254 for Mr. Cuene's prepared statement.

In the early stages of development water served as the principal mode of transportation. It was also the major source of power. It was also a key element in the actual processing of wood pulp into paper. Water today remains essential for a number of manufacturing processes for many of our industries and the Port of Green Bay continues to serve as an important element in the transportation infrastructure here in Brown County.

We are, however, a community in transition. We are changing. The new industries that we are attracting to Brown County and the Fox River Valley are not dependent upon water in the actual manufacturing processes that they employ. People are no longer looking at the Fox River and Lower Green Bay solely as a means for industrial development. Now, I do not wish to imply that the area's major economic base is not water-related because it still is, but clearly the role that this resource plays is changing, and it is going to continue to change dramatically in the future.

We consider our water resources as extremely valuable assets—ones that need to be properly cared for and ones that we can use to strengthen our community as a good place to live and to work. Brown County is in competition with many other areas for new jobs and businesses, and it has also become apparent that in this competition our deciding edge could well be the quality of life that we afford to the person who lives here in this community. To me that quality of life can be tied directly to our water resources.

We are starting now to look at this as we develop our cities, and our water frontage has an opportunity for social and economic advancements and these in turn would add greatly to the quality of life that we enjoy. It is this quality of life which can properly be described as one of a number of amenities that a community offers its residents such as low crime rates, good transportation, education, cultural and recreational offerings and abundance of good clean water for drinking, swimming, fishing, and for boating. And in terms of attracting new businesses and people to this community, the quality of life will be equally as important as a good business climate. We have been stressing the good business climate in this State for a number of years now, and I think it has improved, but to me again equal importance should be placed upon what we also can offer and water plays a very important role in that. In looking at that, it is clear to me also that our community cannot and will not overcome poor or offensive water quality.

When I was a kid we used to walk across the Walnut Street Bridge and you had to hold your nose because of the smell from decaying and rotting fish that were 20 to 30 feet deep on the banks of the Fox River. We do not have that problem now. Now you see people sitting out there in front of our museum fishing walleyes which is something that would have been unthinkable 10 to 15 years ago. Now, the look, the smell, and the quality of our water is going to ultimately determine our future success or our failure.

With those thoughts in mind, I would like to take just a couple of moments to talk a little bit about the action that has already been taken care of in rehabilitating our resource. As a result of the Great Lakes Water Quality Agreement, the United States and Canada decided to address the environmental issues, and they identified 42 Areas of Concern around the Great Lakes. The ones in Lake Michigan are identified by the map up front. They have started the process of developing Remedial Action Plans to address those problems.

Here locally slightly over three years ago a group of concerned citizens, some State and local officials, as well as some members of our scientific community got together and started to work on developing a comprehensive plan to identify and address the problems that we face in the Fox and Wolf River Basin. They started to approach this problem looking at the system, the entire watershed, with an ecosystem approach. And the basis of which, looking at that plan, was established through a prior EPA workshop which was held in Green Bay. They built about the successes that we had experienced in water quality improvement over the years, and the EPA also provided or assisted us with a small amount of funding which was requested by our Wisconsin Department of Natural Resource for staff support to help actually write the plan. The result of this effort culminated in February of 1988 with the signing of the Green Bay Lower Fox Remedial Action Plan.

Now, what we had when that plan was signed, at least in my estimation, was an incredible opportunity that was afforded us. It showed the citizens of this community our need to develop a common commitment toward the environment in which we live and raise our families. The plan pointed out the numerous benefits that we would receive from implementation, all of which are closely intertwined. Some, such as the swimming and the fishing, are more visible than others; however, without the less visible effects of reducing pollution loads and dealing with toxic contaminants, the fishing and the swimming and the more noticeable improvements in the environment would not be possible.

But along with all of these benefits, the plan also presented us with what I consider to be the most formidable challenge. Quite simply stated the challenge is implementation. At the onset, it was clear to me that Brown County itself would not be able to implement the recommendations of the plan. Brown County is at the end of the drainage basin which encompasses all of the portions of over twenty counties in Northeastern Wisconsin with over one million people living in hundreds of cities, villages and towns. The basin has over 40 watersheds, it has over 120 industrial dischargers and over 60 municipal sewage treatment plants.

So it was apparent that one entity alone could not participate, or could not totally implement the plan, and it also became apparent early on for implementation to become a reality, all the governmental entities, all of the industries, and all of the residents would have to work together, and it would require massive educational efforts as well as cooperation and coordination at all levels. To me that is the biggest challenge that still faces us.

In addition the plan carries a hefty price tag. To be totally successful, it is going to require hundreds of millions of dollars, and it is difficult to expect the total cost to be borne by those residents who live within this area, and I would hope to see some fair, some equitable cost sharing proposals formulated which would divide these costs among local communities, local industries, and the State and Federal Government.

Now, currently we are trying to accomplish many of the objectives of the plan by using a volunteer committee—a volunteer committee which has no source of funding. It has no regulatory authority. At best we are trying to keep public awareness of the RAP high. We are trying to encourage others in the areas of pollution abatement and water quality improvement. We are doing our best with what little resources we have just to keep things going, to not let the fire die. But for the plan to really reach fruition we need more than just the dedicated band of volunteers. As I mentioned before, we need cooperative, coordinated commitments, from all levels of government, and the development of some kind of governmental regulatory authority charged with the plan's implementation.

In addition to the State and local resources we need the EPA and Federal Government to play a bigger role. I feel we desperately need direction on the Federal level in dealing with in-place pollutants. I think it has been mentioned a number of times here this morning, but we need to see some direction as to where we go with this particular problem. I guess I would like to see a continuation of the assessment and remediation of contaminated sediment programs from the 1987 Water Quality Act. This would assist us in developing new technology. It would build local support for cleanup projects. It would really be beneficial to the program and to the efforts of dealing with contaminated bottom muds.

Currently there is no program to remediate contaminated sediment problems, which are common not only to Brown County but to most of the other 42 identified Areas of Concern on the Great Lakes. This has been one of the largest areas of local concern and controversy here in Brown County as we try to deal with the disposal of contaminated muds from our harbor's maintenance dredging program. And without Federal support, without Federal direction, it is unlikely that we here in the county or even the state are going to be able to handle this serious and extremely enormous problem.

I would personally like to see a Federal and State partnership formed in creating an in-place pollutant cleanup program. I believe the program could be similar to the Superfund, and costs could be recouped from culpable parties. And I think it would stand a strong chance of working. In addition to the commitment from the EPA, we also need funding. Now, as a local government official, I can appreciate all of the demands that are placed upon you in Washington. But I can also appreciate the fact that if we do not start adequate funding of remedial actions on environmental issues that all of those other demands may become moot.

Now, solutions to these problems will affect both private and public concerns. The solutions will be expensive. Often times they will be controversial, and in many cases it will require a long period of time to see them to fruition. However, I do believe the end result is worth the time, it is worth the money, and the effort necessary to achieve it.

And in closing I would just like to say that I am personally excited by the prospects that a clean river and lower bay holds for Brown County. I hope my enthusiasm is shared by people at the State and Federal level. I am sure it is shared by a number of people in this community. By working together, I think that we can and will make it happen, and by doing so we will all be able to enjoy the benefits of a cleaner and healthy environment. Thank you.

Senator **Kohl**. Thank you, Mr. Cuene. That is an excellent statement.

Mr. Wible, in many respects you are our point man. Although you are not representing the EPA, you do have a very important role to play here with respect to your association with the DNR. I think—I would like to hope that it is fair to assume—with the grants we have just gotten, with the work that has been done in Green Bay, and in Sheboygan, at some point in the foreseeable future we will have all four RAP's completed. Is that a fair hope for me to express?

Mr. **Wible**. Certainly is Senator. I am sure many of us share the same hope. I think you have heard in spades today good reasons why each of these Remedial Action Plans and areas of concern is unique, why each of these has a set of factors, whether it is a Superfund issue, a potential source, or whether it is the history. We do not talk much about it in Green Bay, but there was a "Future of the Bay 2000" project which preceded this. I personally am not close to it. I do not know to what extent something like the Future of the Bay project might play a role in the way a community structures and approaches a project. In Collecting of additional data on the Menominee River, situations like that are going to occur. I serve on the Great Lakes Water Quality Board, and one of the things that we liked about the remedial action planning process, one of the reasons we recommended it in 1984 on an advisory basis—it was never a mandate for agencies to have to do this—but we recommended it to the two nations, because of the uniqueness of each of these areas of concern. We felt it provided a basis for local concerns to be manifested for that notion of a future vision of what the water resource could be, as Tom Cuene has talked about. That future vision could be laid out and agreed upon as a common end goal. So this tailoring of the process and tailoring of the end goal to the local perception is one of the very important features of the remedial action plan that led us to recommend that. And I think that is the one thing that holds me back from giving you a carte blanche commitment.

We will have to be there when the time comes. In Milwaukee, for example, you have a 30-year history of very sophisticated regional planning and the people in Milwaukee are coming off—as recently as 4 years ago—the end of $20 million of facilities planning in order to mount that pollution abatement program. So we do not know what kind of public expectations we'll encounter there in terms of the level of detail, level of sophistication. That is not to say that we are not trying to manage that project, we are trying to manage it, we are trying to foresee those things and lay it out. But there is always that need to be flexible. If we are going to get a serious effort and really be sincere in our willingness to communicate and cooperate with people, we have to "have our ears open" and listen closely to what they are telling us.

Senator **Kohl**. Can you push that a half an inch further. I would like to hope that with respect to Sheboygan and Menominee——

Mr. **Wible**. Yes.

Senator **Kohl** [continuing]. That these two RAP's will be finished this year. That gives us 7 months. Is that reasonable?

Mr. **Wible**. Our estimate now it will be in the middle of 1990, summer, fall of 1990 for Marinette.

Senator **Kohl**. Over a year?

Mr. **Wible**. Yes.

Senator **Kohl**. Over a year from now?

Mr. **Wible**. A little over, a little over.

Senator **Kohl**. And your thought on Sheboygan.

Mr. **Wible**. Again Sheboygan should go—should be completed this summer.

Senator **Kohl**. This summer?

Mr. **Wible**. Yes, sir.

Senator **Kohl**. And your hope bordering on commitment for Milwaukee?

Mr. **Wible**. My hope bordering on commitment is that it would be initiated—it is initiated now, and that it would be completed by the fall of 1991.

Senator **Kohl**. 1991. The fall of 1990—2 years from now?

Mr. **Wible**. Yes, sir.

Senator **Kohl**. And some months?

Mr. **Wible**. Yes, sir.

Senator **Kohl**. Okay. Mr. Cuene, I would like to hear you express in your way once again if necessary, how important clean water, fishable water would be to the quality of life and to your economy here in Green Bay.

Mr. **Cuene**. Okay. It is extremely important, Senator. With regards to the economy, as I mentioned before, the bulk of our major manufacturing is water related. We are a paper mill community. In essence James River, Fort Howard, Procter & Gamble, U.S. Paper, Nicolet Paper, all of these directly use the water resources that we have through the Fox River and the lower bay, and in that sense our economy is predicated upon good clean water being available for those processes. We also have a responsibility, industrial responsibility, to return good clean water to the system after it is been used, but I see things changing, I see the focus being substantially different than just looking at the resources as an economic one. I see us starting to look at this in a sense of opportunities for recreation, opportunities to use it for the leisure time that everyone seems to have a little more of nowadays.

One of the fastest growing areas up here is recreational boating, and I think it is directly attributable to the fact that the water has started to clean up. We do not have the problems that we had and that I was familiar with as a child in fishing for carp along the Fox River. Now, they are out there, they are fishing for wall-eyes, and sword fishing and the fact that when we used to go out to Long-Tail Island at the mouth of the bay we could go out there on a Saturday in the summer, there may be 15 or 20 boats, and you go out there now, Senator, you are lucky if you can find a open space on the beach, we probably got close to 400 or 500 hundred boats out there, so I think the people are seeing this as really an advantage to living in this community, the fact that we do have an abundant amount of water or water resources available for use, and to try and put a monetary figure on that is really difficult. The intrinsic value of just knowing that you can go out and sportfish or walk along a clean river is something that I think is extremely hard to put a figure on, but it is very, very important to our success and our future success.

Senator KOHL. I would like to ask all of you out there whether you have comments, whether you would like to ask a question of our two panelists here before I summarize what I think we have accomplished this morning. Would anybody like to make a comment or ask a question. Yes, sir, in the back row.

Mr. GELBRICK (phonetic). Senator Kohl, my name is Bill Gelbrick. I am retired. I live east of Denmark. I would like to make a comment. I do not think we should be lulled into sleep by the fact that we are out catching wall-eyes and not carp, because you can catch the wall-eyes, but you cannot eat them, and we have to reach a point where when you catch that fish, it is safe to eat. Thank you.

Senator KOHL. Okay. What else? All right. Let me first of all express my appreciation on behalf of all the people here in Wisconsin and on behalf of the United States Senate for all of you who came here and testified so frankly and eloquently this morning. I appreciate it.

This happens to be the first hearing I have ever chaired, and it has been a good experience for me. I come away feeling that the people in Wisconsin, as I have always known, are very forthcoming and very honest and expressive about the problems that we face here. I am impressed with the intent that we have to get on with the job. It is pretty clear to me that the RAP's that are not finished yet are going to get finished just as quickly as we can. I would like to hope these hearings provide some impetus for that. But by and large I believe the job is going to get done. I think we all recognize that the job is just in the planning stage, but that does not detract from the importance of the RAP's. They set the stage for the job that needs to be done, and we are a considerable ways from that point, both in terms of time and in terms of finances.

I am quite concerned that in order to get the job done we are going to need hundreds and hundreds of millions of dollars, and that we do not have that funding at the moment. That funding is going to have to come from the EPA, from the Federal Government in large part, and that we do not have all of the technical expertise yet in place to get that job done. I am impressed with Dr. Harris' belief that regardless of how we proceed, we are talking about many years before the fish, for example, can be safely caught and eaten.

Nevertheless I think this is something we have to get on with. I think everybody agrees we have to get on with it. The longer we wait the worse the problem gets, and the more expensive it gets. We are talking about quality of life.

We are also talking about, in my judgment, economy in the sense clean and fishable waters bring in tourism and money, which is something that all communities in Wisconsin need very much. So I think it is both a quality of life issue and an economic issue, and they do come together in a way that I think is pretty tangible.

I will take back to Washington, ladies and gentlemen, the things I have heard here today. I think that we are a better community here in Green Bay for having held this hearing. I think that Menominee, Marinette, and Sheboygan will benefit greatly from what I have heard today, and I would like to express my appreciation to everybody for your contributions. Thank you very much.

[Whereupon, at 11:30 a.m., the hearing was adjourned subject to the call of the Chair.]

OVERSIGHT OF EPA AND THE GREAT LAKES WATER QUALITY AGREEMENT

TUESDAY, MAY 23, 1989

U.S. SENATE,
SUBCOMMITTEE ON OVERSIGHT
OF GOVERNMENT MANAGEMENT,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Milwaukee, WI.

The Subcommittee met, pursuant to notice, at 3 p.m., in the Milwaukee Department of Natural Resources Building, Milwaukee, WI, Hon. Herbert Kohl presiding.

Present: Senator Kohl.

Staff present: Elise J. Bean, Counsel to Subcommittee on Oversight of Government Management; Beverly Anthony, Legislative Assistant to Senator Kohl; William Ritz, Press Secretary to Senator Kohl; Jonathan Sender, Milwaukee Office Director to Senator Kohl; Eve Galanter, Madison, WI, Office Director to Senator Kohl.

OPENING STATEMENT OF SENATOR KOHL

Senator KOHL. Good afternoon, ladies and gentlemen. I would like to welcome you to this Senate hearing on oversight of government management. I have a statement that I would like to read at this time.

We are here today to address one of the most important environmental issues facing the residents of Wisconsin: How to clean up the Great Lakes as quickly and effectively as possible. This is more than an academic issue. The Great Lakes contain 18 percent of the world's fresh water supply. Twenty-five million Americans derive their drinking water from the Great Lakes and millions more depend on them for commerce, industry and recreational activities.

Bringing these figures closer to home, approximately 25 percent of all Wisconsin residents get their drinking water from Lake Michigan and Lake Superior. Clearly, these two lakes represent our State's most valuable natural resource. The purpose of this hearing is to encourage and evaluate the work that public officials, industry and interested citizens are doing in our common effort to preserve the integrity of the Great Lakes.

So far, progress on improving water quality in the Great Lakes sounds like a good news/bad news story. First the good news: Considerable progress has been made.

In 1972 the Great Lakes were, in a word, dying. Conventional pollutants like phosphorus were choking the lakes, killing fish, plants and aquatic wildlife. People demanded action and they got it. United States and Canada signed a treaty, the Great Lakes Water Quality Agreement of 1978, which committed both nations to undertake a number of specific actions aimed at reducing pollution in the lakes.

That commitment was met. Between 1972 and 1986 phosphorus levels in the lakes were reduced by 80 percent. That is a remarkable success story, demonstrating that a great deal can be accomplished when Federal, State, and local interests work together to fight pollution. That is the good news.

And now for the news that is not so good. As conventional pollutants decreased and we nursed the Great Lakes back to health, scientists and environmental experts began to take note of an even greater threat to the Great Lakes ecosystem in human health: toxic pollutants. Although in many areas the lakes were looking better, toxic materials began to be discovered throughout the lakes, including PCBs, lead, mercury, arsenic, cadmium, dioxins and furans.

Because we do not see the effects of these toxic pollutants when we look at the lakes, it would have been easy to ignore them. Thanks to the diligence of a dedicated band of scientists, community activists and public officials, that did not happen. Once again people demanded action, and once again government responded. In 1987 the United States and Canada amended the Great Lakes Water Quality Agreement to increase attention on toxic pollutants. The amendments reaffirmed our pledge to "virtually eliminate the discharge of persistent toxins into the Great Lakes." New provisions address such problems as contaminated sediments, contaminated groundwater and air toxics.

Specifically these amendments called for a number of actions on the part of both nations. For example, the amendments required special clean-up efforts for 42 sites with severe contamination along the Great Lakes shoreline. These 42 areas of concern, commonly called toxic hotspots, are located throughout the Great Lakes. There are 30 hotspots in the United States, and five of those are located on Wisconsin's shorelines, including the St. Louis River on Lake Superior and four sites along Lake Michigan: the Milwaukee Estuary, Southern Green Bay, Menominee River and Sheboygan Harbor.

For each toxic hotspot, the Water Quality Agreement requires the development of a specific clean-up plan referred to as a Remedial Action Plan or RAP. But despite a reasonable schedule published in 1985 for the completion of these vital clean-up plans, only one plan has been completed and ready for implementation. As many of you know, that plan is the Green Bay Remedial Action Plan. The efforts of the State of Wisconsin, local government officials and community leaders are to be commended for this accomplishment. However, the report card on the other RAP's in the State is much less than satisfactory.

In fact, the record is abysmal. The Sheboygan Harbor RAP was originally scheduled for completion in December of 1986. That date was moved back to October of 1988. And now, after both of those deadlines were missed, we are told that the new target date is December, 1989.

For Menominee River, the original deadline was June, 1986. After that date was missed, the new deadline was set at October, 1989. And we are told that it will be December of this year at the earliest before that RAP is completed.

Milwaukee's story is even worse. After missing a deadline of June, 1985, the schedule was pushed back 4 years to October of 1989. But after all this additional time, work has barely begun on development of a RAP for the Milwaukee Estuary. Estimates are that 2 more years of hard work are needed and the deadline has been pushed back to 1991. Worse yet, we are just talking about the clean-up plans, which is the easy part. The real work, the actual cleanup, remains on the distant horizon for all but Southern Green Bay.

In addition to the Remedial Action Plans for specific problem areas, the Water Quality Agreement requires the development of Lakewide Management Plans for each of the Great Lakes. These plans are intended to provide integrated management strategies for each lake. The United States pledged to begin with a plan for Lake Michigan, but 2 years later it has not produced even an outline for the Lakewide Management Plan.

In my view, these delays are embarrassing and totally unacceptable.

When I try to understand why we have not done more, I look first to the Federal agency which is responsible for ensuring action on the Great Lakes. Congress clearly designated the Environmental Protection Agency as the leading Federal agency. We gave the EPA the job of making sure that we met our obligations under the Agreement.

This hearing is designated to find out where the EPA has been while deadlines have slipped and toxic pollutants have accumulated in our lakes. What has the Federal Government done to insure that United States is meeting its treaty obligations? What has the Government done to protect the safety of its citizens and the health of its wildlife and natural resources?

To answer these questions, we need to talk to the States and localities which have been given on-line responsibility for developing the RAP's. Why haven't they made more progress? Has the EPA been giving them the necessary assistance and leadership? And why has Green Bay been able to develop a program while every other locality is still drafting proposals?

This, however, is not an exercise in placing blame. We want to find out what we have to do to get the job done. Do we need more people and money? A less bureaucratic structure? More action at the State and local level? More pressure from the Feds?

These questions deserve an answer. As a lifelong resident of Wisconsin, I, and I am sure you, love our Great Lakes. As concerned citizens, we know how valuable they both economically are—they both are economically and sociologically. As an elected official, I am not satisfied with our failure to do what needs to be done to clean up these lakes. If we do not demand that our government protect the Great Lakes, then we are only cheating ourselves.

I very much hope this hearing will help us to establish a record on the EPA's efforts to implement the Great Lakes Water Quality Agreement. This is our chance to hear from individuals and officials in Wisconsin about their experiences in developing clean-up strategies for Lake Michigan's hotspots. At hearings to be held later this summer in Washington, D.C., I will present these findings to the EPA and demand that the delays and the problems be corrected.

In addition, I would like to take this opportunity to announce that I will be forming very soon an environmental advisory committee. This committee will be made up of Wisconsin residents who are concerned about the environment and who will keep me informed about the environmental concerns of our state. I appreciate the interest and cooperation of all those in attendance today. By working together, I hope we all can make a speedier cleanup of the Great Lakes possible.

I would like to announce that I was pleased to learn yesterday that the EPA has released two grants to the Wisconsin DNR after months of delay. One grant for $48,887 will allow the State to hire someone to help coordinate and write the Menominee River Remedial Action Plan. Another grant for $55,000 will pay for a staff person to write the Milwaukee Harbor RAP. I am very grateful that the EPA has finally approved these grants. It is very important to our communities. At the same time, I am concerned that it took this field hearing to pry this money loose.

And now we will get to our hearing. I would like to just read the ground rules. Each person on the panel should speak, and then I will ask questions of the whole panel. Each speaker should keep to 10 minutes or less so that we will have plenty of time for questions. All written materials will be made part of the record in their entirety, and we will keep the record open for additional materials.

Our first panel is comprised of Susan Mudd, James Ludwig, and Jane Elder. If they would please come forward at this time. Susan Mudd is Director of Citizens for a Better Environment, a very active environmental organization in the State of Wisconsin. She has been a leading participant in the development of the Milwaukee RAP at the local level. In addition, she has graciously agreed to chair the environmental advisory committee of mine which we will officially announce this summer.

Dr. James Ludwig is president of Ecological Research Services. He has spent years conducting scientific research on the Great Lakes ecosystem, documenting the effects of toxic contamination on fish, birds and other wildlife.

Jane Elder is Director of the Sierra Club's Great Lakes Federal Policy Project and is also Director of the Midwest Chapter of the Sierra Club, one of the nation's largest environmental organizations. She is an expert on the environmental problems in the Great Lakes region. Thank you very much for being here.

Ms. Mudd, would you like to make your statement?

TESTIMONY OF SUSAN MUDD, DIRECTOR, CITIZENS FOR A BETTER ENVIRONMENT[1]

Ms. MUDD. Yes. Thank you, Senator Kohl. First of all, I would like to thank you, Senator Kohl, for taking the initiative and the leadership in holding these hearings on the Great Lakes Water Quality Agreement and on the EPA's implementation of that important agreement. I appreciate the opportunity that you have afforded us to explain our position regarding the need for further EPA efforts on protection and restoration of water quality in the Great Lakes.

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[1] See p. 260 for Ms. Mudd's prepared statement.

As you know, I am representing Citizens For a Better Environment, a regional environmental organization with offices in Wisconsin here in Milwaukee, Green Bay and Madison. We are a research, advocacy, and educational organization with over 30,000 members in Wisconsin, Illinois, Indiana and Minnesota. So most of our members are affected by the Great Lakes Water Quality Agreement and its implementation.

Since the early 1980's CBE has worked on the problem of toxic pollution of the Great Lakes ecosystem. Our focus is reducing human exposure to toxics in all media: air, water, land, and food, so as to protect human health. You have invited me here today to address three related issues: One, the status and health of Lake Michigan, Milwaukee Harbor and the related tributaries. Second, EPA's record in assisting the Milwaukee community in developing and implementing a Remedial Action Plan for the Milwaukee Harbor and Estuary, and the current status of that RAP. And third, what action should be taken next to improve the health of the Great Lakes waters surrounding Milwaukee?

I will address each of those questions separately, but first I would like to share with you our reasons for caring about the EPA's implementation of the Great Lakes Water Quality Agreement. Many of us who live here in Milwaukee remember the days when we could swim in Milwaukee's harbors and rivers. We used to be able to, but we can no longer. Many of us also remember when we were be able to eat the fish that were caught here without being advised against that for health reasons. Now we can no longer. Many of us have a vision of being able to even drink the water in the waters that flow through Milwaukee and in our harbor and our lakefront. We are advised against doing that as well.

Many of us believe that this community should have a thriving sport and commercial fishing industry. It does no longer. Many of us also believe that we can have a vibrant tourism industry in this community. We have one because of our location along the Lake Michigan shores, and it is slowly improving. But clearly having clean water would help to draw more tourists to this community.

We believe that the rivers, including the tributaries to Lake Michigan, can and should be pleasant to the eyes and nose and ears. They are not any more. Clean water and clean air are good for the economy and they are good for the people of Milwaukee and the rest of Wisconsin.

The current situation is not so good. We would like to turn that around. And that is the fight and the efforts that we are working on, and we share those concerns with you today.

The Great Lakes Water Quality Agreement has led to some improvements in the water quality of Lake Michigan. In your opening statement you alluded to some of those, including the reductions in phosphates and some of the other conventional pollutants. Due to those efforts, our lakes do look cleaner.

Similarly, visible air pollutants have been diminished through efforts under the Clean Air Act, some of them also encouraged by the Great Lakes Water Quality Agreement. So until the last two summers when we had numerous ozone advisories and one alert that made us all take notice, we had been being told for years that the smog problem was being dealt with. So we had, over a number of years, been lulled into a sense of security about the safety of our air and water. We can no longer rest on those laurels. The problems of pollution in Lake Michigan are much greater than have been addressed to date.

Milwaukee's harbor, as you have alluded in talking about the RAP, has not improved as much as many lakes and streams have in this State. A variance still in place allows there to be so little oxygen in our water that even if the toxins were removed, many fish species could not survive. And unfortunately, the toxins are much worse. The sediments in Milwaukee's harbor store dangerous levels of PCB's, polyaromatic hydrocarbons, heavy metals and pesticides. A snapping turtle pulled out of the Milwaukee River leading into the harbor turned out to have levels of PCB's of 72 parts per million. That is over seven times the EPA's standard for highly contaminated levels, and it is over 70 times the FDA limit for what is acceptable.

There is plenty of evidence about the problems of Milwaukee's harbor. We have the dubious honor of being home to the single largest pollution source to Lake Michigan, the Milwaukee Metropolitan Sewerage District. That is in part thanks to Illinois having turned the course of the river feeding out of Chicago. Our harbor is also home to numerous coal, salt and scrap metal piles, the run off from which is dumping arsenic, cadmium, lead and other heavy metals into our harbor. In addition, nonpoint sources remain a major pollution source to Lake Michigan, again coming through our communities from the north and here in Milwaukee.

The current threat to our harbor, and to the health of our lakes is clear—the largest threat is the invisible toxic air pollutants, those persistent bioaccumulative toxins now integrally mixed in our water, air and food chain. The Great Lakes Water Quality Agreement recognized this when it committed the United States and Canada to "eliminate to the maximum extent practicable the discharge of pollutants into the Great Lakes system." The Agreement further set as a goal the virtual elimination of discharges of persistent toxic substances into the lakes and provides that "the philosophy adopted for control of inputs of persistent toxics substances shall be zero discharge." Unfortunately, neither of these goals have been met.

The evidence is mounting of the problems of the toxins entering our system and the problems that they are causing to us as citizens. The National Research Council and the Canadian Royal Academy of Sciences found substantial evidence that humans living in the Great Lakes basin are exposed to, and accumulate, appreciably more toxic chemical burden than people living in similarly large regions of North America for which data are available. Also, studies of pregnant women eating about four fish meals of

Great Lakes fish monthly have found that they are now bearing children with lower birth weights, smaller head circumferences, more developmental and neurobehavioral disabilities and greater numbers and types of infectious illnesses than among infants born to women who consumed no Great Lakes fish. So the contaminants are now in our systems, in our bodies, and we are passing them along to our children.

Across the basin this has meant that advisories are now in effect warning us not to eat many of the species of sport fish caught here regularly. In Wisconsin the latest advisory issued just last month lists 180 lakes, rivers and stream segments where certain fish should not be eaten due to PCB, pesticide and/or mercury contamination. Right here in Lake Michigan and the Milwaukee River there are nine different types of fish, including lake trout, chinook salmon and brown trout that we are advised against eating.

Wisconsin also has in effect a waterfowl consumption advisory for mallards, bluebills and black ducks, usually hunted along our shoreline. Issued in 1987, this was the first waterfowl advisory in the Nation, and it remains in effect today. What has happened? What have we done to take care of these contaminants and these toxins?

To date the U.S. EPA and State governments have focused on the point sources, those industrial and waste water, municipal waste water treatment facilities. Last year, after 8 years of urging by environmental groups, capped by a Federal lawsuit and some threats by EPA, Wisconsin adopted a series of rules aimed at limiting the discharges of toxic pollutants into our State's waters. Those rules, however, fall far short of meeting either the standards or the intent of the Great Lakes Water Quality Agreement. Environmentalists pointed out many shortcomings of the rules, the use of mixing zones, now given a new name, called zones of initial dilution, the reliance on dilution and the absence of any certainty of even a freeze in the current levels of discharges of toxins into our waters. What did EPA do? Just last week they approved these rules, almost without change.

In its documentation, the EPA responded to the comments of the public on these rules. They pointed out a number of problems with the rules, most specifically on the PCB's. EPA found that the State criteria for regulating PCB's as implemented through the rule are not, in the opinion of the U.S. EPA, supported by the scientific and technical information. And yet it approved the rule on the condition of that one change of PCB's. Although it had the grounds and the justification to disapprove the rule and strengthen the rule, it chose not to.

On the PCB issue, the most phenomenal problem in terms of EPA's action is that it was silent on what action the State should take on PCB's in the ensuing year, what action should be taken on permits for companies that are now discharging PCB's. It was absolutely silent. This virtually assures that the PCB's will continue to pour in at current levels without any abatement.

I mentioned that dilution was also a problem with the Wisconsin rules. This is true not only in our water rules but also in our air rules, although I will use an example the water rules. Dilution is a concept used for conventional pollutants where one can dilute the concentrations of certain toxins into low levels, with the assumption that that will not cause problems. But that ignores the real problem with the persistent bioaccumulating toxins that we have now in the Great Lakes, and that is the problem of the accumulation of total loading of the toxins.

Again the rules inadequately dealt with this by allowing dilution and allowing zones of initial dilution. EPA in its comments on the rules acknowledged, at least with the zones of initial dilution, that its current guidance falls far short of what is necessary to implement the Great Lakes Water Quality Agreement. But this is the crux of the problem. EPA and the States in Region 5 are relying on past guidance instead of on the Great Lakes Water Quality Agreement and instead of on the EPA's mandate under the Clean Water Act, Section 118, to implement that agreement.

EPA has promised recently that it will come out with guidance to implement the Great Lakes Water Quality Agreement in Region 5. That guidance has not yet been forthcoming, and we are hopeful that one of the other accomplishments of these field hearings may be some motion by EPA on that front.

I would like to touch now on the status of the Milwaukee Harbor Remedial Action Plan that you asked about. As your chart points out, 3 years ago the Wisconsin DNR had promised to complete Milwaukee's Harbor RAP in fiscal year 1987. As recently as this year, the DNR has now promised to finish that in 1991. But to date the RAP has not been started. We were very pleased, Senator Kohl, to hear your announcement today about EPA finally releasing the funding for DNR's efforts to work on this RAP. It is, frankly, hard to know what the problem has been because the EPA has chosen not to push up until now for a RAP, and the DNR has used that as an excuse to not move on the RAP in Milwaukee until today. But we are very hopeful that with this new funding, efforts will get started finally.

What other actions are needed to improve the health of Great Lakes waters? Clearly there are numerous sources which need to be addressed, and I would like to focus my remaining few moments on air toxics, a source for which federal action is extremely overdue.

In the 18 years since the enactment of the Clean Air Act, the EPA has managed to regulate only eight toxic air pollutants of some 30,000 now in common use in the Great Lakes basin. Estimates are that for Lake Michigan, the lake which all of us in this room live near, some 50 to 90 percent of the toxins entering that lake are from airborne sources. Recently released data under the Community Right to Know Law and the Superfund Law has for the first time given us some idea of the magnitude of those emissions. We found that in Wisconsin some 46½ million pounds of toxins were dumped into our air in one year alone, 1987. And over a million of those pounds of toxins came in Milwaukee County alone.

What has EPA done? Nothing other than completing those eight standards in the last 18 years. In the meanwhile, Wisconsin and 25 other States have decided to limit certain air toxic emissions. But I am here to tell you that the process in this State has been long, it has been painful and at this point there is an uncertain outcome.

While the DNR spent 8 years developing, negotiating and compromising a rule toward the eventual goal of limiting the emissions of some 400 toxic pollutants, we are very disappointed at the results. Industries were included in the process, yet their trade groups sued before the rules could ever go into effect, seeking to invalidate them. While we in the environmental community believe that the rules are not strong enough to adequately protect human health and the public health and welfare, we believe that the alternative of relying on EPA standards was non-existent and so we have intervened to protect Wisconsin's rules. To date we have been successful in having them upheld, but an injunction is now in effect, meaning that companies are not even required to plan how they would diminish their emissions to comply with the limits.

Regardless of the outcome of the lawsuit here in Wisconsin, Federal leadership and action are needed on air toxics. Even if Wisconsin's rules were in effect today, Lake Michigan would be accumulating airborne deposition from Wisconsin and elsewhere. Additionally, without Federal support and action, States may adopt inconsistent limits. Businesses will use the discrepancies, as they have in Wisconsin, to claim that being in a particular State puts them at a competitive disadvantage, and they may even use this as a threat to leave the State, as they have in numerous discussions here in Wisconsin. This sort of discussion inevitably makes decision-makers wary and leads them to make concessions to business interests that are not necessarily in the interests of protecting the health and welfare of our citizens. We have found in numerous cases that industries can make a profit when they reduce their use of toxic substances, but we have found no reflection of this in the standards that are being adopted at the State or the Federal level.

I would like to conclude by remarking that to date the EPA has failed to implement the Agreement, especially in the realm of toxins. It has failed on a source by source basis as I have discussed in the area of air and water toxins. But even more importantly from the perspective of the Great Lakes and all of the residents, it has failed by not developing a multi-media, multi-source approach to the problem and one that mandates the use of toxic use reduction by industries and individuals alike. To carry out the agreement, the EPA should be mandating a toxics freeze to prevent increased loadings of the most dangerous pollutants. It should then develop and force implementation of phased reduction of the use of toxics.

Until EPA takes these steps, the citizens of Wisconsin and all other Great Lakes States and provinces have only the words of the agreement but the reality of contaminated harbors, fish and waterfowl, damaged fishing industries and the potential for permanent harm to other industries, including tourism, forestry and agriculture to contend with. Our quality of life and our future ability to breathe our air, drink our water and eat our fish now rest on EPA's willingness to act. Thank you very much.

Senator KOHL. Thank you, Ms. Mudd. Dr. Ludwig.

TESTIMONY OF JAMES LUDWIG, PH.D., PRESIDENT, ECOLOGICAL RESEARCH SERVICES [1]

Dr. LUDWIG. Thank you, Senator Kohl. I want to thank you as a citizen of the State of Michigan for having someone from across the lake on the other side come and discuss some of the problems with you. I also want to compliment you on the seating arrangements today. It is delightful to be here between two ladies who are known as the best thorns in the sides of polluters in the State of Wisconsin.

My particular interest in Lake Michigan and the wildlife problems in that area deal with the toxic contamination problems in the basin. Lake Michigan is a very highly contaminated ecosystem. The major sources of contamination are concentrated in the southern and western ends of the basin. However, the wildlife throughout the basin is now showing problems.

I cannot comment on the specific problems in the Milwaukee Estuary simply because I have never done any research in this area, and I am essentially ignorant of the problems locally. But, what I can talk about is what is going on lakewide. There are strong indications that total contamination from a number of toxic materials, particularly PCB's, has, in fact, declined. Equally there is excellent evidence now that the actual toxicity of what is left over has increased significantly in the last decade to a point where it is involving wildlife health and human health impacts for a variety of species.

What was not anticipated by those individuals who were made responsible to regulate these materials was that the lakes themselves are sorting the materials and retaining the most toxic of the contaminants in the water column while exporting the less toxic ones to the air and to the sediments. For example, the result is that a recent study, done in Green Bay found that the most toxic of all PCB congeners, a pentachlorophenol, was nine times more abundant in bird hatchlings at the mouth of the Fox River than was present in the original Aroclor mixture that was discharged into the water. This kind of a bioconcentration problem means that we cannot use conventional thinking and treat these materials as conventional pollutants. And, if you would carefully look at the regulatory structure at both the Federal and State levels, you will find that underlying all of the assumptions about regulations is the keystone assumption that these are conventional pollutants, which they are not.

Secondly, we cannot regulate these materials on the basis of the original mixtures discharged into the environment. I was discussing a few moments ago with an employee of this DNR the fact that the Aroclor compound—PCB compound—found in the Milwaukee Estuary most closely resembles an Aroclor mix known as 1260. However, none of the original sources were 1260, which is a clear indication that the environment has sorted the materials out and has retained certain materials in place and exported the rest.

A final problem with EPA and DNR regulations, whether we are talking about Michigan, Wisconsin, Indiana regulation or Illinois, is the underlying assumption that we should regulate for carcinogenicity in human adults and use that as the keystone for our regulatory structure. The truth is you cannot do that. One of three to one in five Americans will die of cancer. It will come from a variety of sources. And cancer is a natural part of the aging process in human beings. What we should be looking at is reproduction, which is what we are not looking at in any of our regulatory structures.

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[1] See p. 276 for Dr. Ludwig's prepared statement.

Some of the failures that I see in the government approach to these matters, whether Federal or State, is well illustrated by the Green Bay Mass Balance Study that is currently under way in Green Bay where a total of $3 million from Federal sources are being spent to measure the toxic pollution and the compartmentalization of this in different places in the ecosystem. In spite of the fact of being informed repeatedly by a number of technicians, such as myself, the EPA has chosen to monitor only those non-toxic congeners of PCB's, ignoring the ones which cause 99 percent of the toxicity. The reason given for this is that the EPA feels they can model the behavior of the toxic forms by measuring the non-toxic forms in spite of the fact that 15 years of that approach has failed to produce any results.

There are times when I wondered whether or not the regulatory agencies involved in these matters do not have an unspoken philosophy of see no evil, hear no evil, and for God sake, do not research any evil.

A central theme running through the questions posed to me in the letter inviting me to appear here today was whether or not it is possible to reverse the situation. I am convinced that it is. But I am equally convinced that we must act on a variety of levels simultaneously. First, we have got to remove and contain. Remove from the water column and then contain the highly toxic materials present in the sediments, while at the same time remove the point sources that Susan commented on a moment ago. If we do not do both at the same time, we will simply recontaminate the sediments.

The state of the art in this regard at this time is to build a confined disposal facility, which for a variety of reasons is always located in or adjacent to the water body where the material is first removed from. This has been an exercise of great frustration because what is principally occurred is that we have largely succeeded in picking up the sediments, resuspending the most toxic congeners, placing these contaminated waters and sediments into CDF's, which are then allowed to redischarge their surface water back to the lakes. And this has had the principal effect, in my opinion, of simply moving the problem from one place to another without ever actually dealing with it.

I believe that what we need to do to move forward in this area is to seek entirely new ways of dredging and dredging technologies. It always has seemed to me that we are being utterly foolish when we pick up these contaminated sediments and go to the incredible expense of doing that in a very dilute form and then dispose of them in a dilute form in a CDF. These CDF's always leak. And what that simply means is the material actually is made more available more often than not, to the biota.

What we need to be doing is to apply mining technologies. For example, we have had in this country, through the mining industry the technology known as the hydrocyclone for 67 years. This is a device that sorts materials and water into coarse and fine fractions. I attended an EPA conference last November at which the hydrocyclone was widely touted as the latest technology that had been applied to mining sediments, which is really what you are doing when you dredge, in Holland, and was probably the wave of the future. EPA discovered this 65 years after the mining industry put it into practice.

I think what we need to do is to approach the private sector, very specifically the mining industry, if we are going to address the sediment contamination problem and ask them for their expertise. I think if you do that in a genteel fashion, a non-confrontational fashion, and particularly if you apply some modest incentives to such folks, that you might be able to solve this dilemma rather quickly. They have the technology in hand and have used it for decades to sort such materials as these contaminated sediments.

With respect to providing funds for this type of activity, I think you need to look in a very special place. You have in Federal law at the present time an act known as CERCLA. Under that act there are Federal damage assessment rules now in place for damage to wildlife. Frankly, I am not very concerned about damage to human beings simply because I am a wildlife biologist, but also I think we are getting what we deserve. If we look at the wildlife, however, those species are innocent.

If you look at the wildlife carefully, you can document a whole series of damaged populations and ecosystems. Under the wildlife assessment damage rules of joint and severable liability, it is necessary to identify the principal discharger in a local area. Under these rules you then have the opportunity to force that principal discharger to identify every other source in the watershed and recover damages from each to restore the wildlife. I submit that if you can restore the breeding habitat for such species as double-crested cormorants and Forsters terns that are extraordinarily sensitive to these contaminants, you will have accomplished every aim of those of us who occasionally eat fish out of these systems. We will have done it by recovering damages from those individuals, corporations, municipalities that discharge this stuff in the first place.

I personally cannot see this Subcommittee under the current budgetary limitations in Washington recommending massive increases in Federal funding. I think that is very unrealistic. However, using the wildlife damage assessment rules under CERCLA, and the courts, I believe you can go a long way towards getting the funds necessary to clean up these sediments.

I think it is also essential that you understand that the EPA Fish and Wildlife Service are essentially the parent agencies to the state regulatory conservation agencies such as the DNR's. Together those three groups, Fish and Wildlife, EPA and the State conservation and DNR-type agencies are co-trustees of the wildlife resources. They should be stimulated to make use of these rules that are now in place as quickly as possible.

Finally, I want to end my statement by saying I have no idea who is in charge of implementing the Great Lakes Water Quality Agreement. In March I visited Washington and was part of the Sierra Club activities there for a week, and we visited with people at the State Department who said, "Oh, yes, we signed the agreement with Canada to enforce the water quality rules, and EPA is to enforce that." When we went to EPA, they said, "We did not sign the agreement. Somebody else has to enforce that, we think." I have no idea who is in charge. And I do not think anybody else does either. Thank you.

Senator KOHL. Thank you, Dr. Ludwig. Ms. Elder.

TESTIMONY OF JANE ELDER, DIRECTOR, GREAT LAKES FEDERAL POLICY PROJECT, DIRECTOR, MIDWEST CHAPTER, SIERRA CLUB [1]

Ms. ELDER. Senator Kohl, I sincerely appreciate this opportunity to speak before the Subcommittee, and also appreciate your leadership and the initiative of the Subcommittee on this issue. It is an important step in attaining better accountability of Federal activities associated with the Great Lakes environmental restoration and protection goals. And in the interest of brevity, I will start on the fourth page of my testimony.

More than a year after the signing ceremony for the Water Quality Agreement with Canada, little new action has taken place in spite of very high hopes. Embarrassingly, the United States has missed several deadlines specifically called for in the Agreement, in addition to the RAP deadlines that you have already specified. As the agency designated under Section 118 of the Clean Water Act to "seek to attain the goals embodied in the Great Lakes Water Quality Agreement of 1978 with particular emphasis on toxic pollutants," we must look to the EPA to find answers to the missed deadlines.

But we need not look far to find those answers. We find an agency dispirited by 8 years of an administration hostile to environmental protection where the Office of Management and Budget has driven many of the policy decisions while programs and divisions scramble and compete for the same precious dollars for research, enforcement and staffing. We find an agency whose Washington leadership has failed to support increased staffing and services in the Great Lakes National Program Office and has also failed to take any leadership in integrating EPA's implementation programs with the goals in the Water Quality Agreement. This year the administration requested $2 million less than last year for EPA Great Lakes programs.

But everybody knows that money alone is not the complete answer. Political will and money will go a lot farther, but rebuilding the strength and the spirit of this agency will take time and leadership. Thus, it comes as no surprise that the Great Lakes National Program Office has fallen short of the large list of expectations and obligations under the 1987 annexes. When time and talent is spent fighting for budgets, arguing with OMB and wrestling internally for cooperation with headquarters, it is not being spent on cleaning up the Great Lakes. However, domestic budget battles are an insufficient excuse for failing to meet the goals of an international agreement, and we need to move forward in Congress and in the agencies to resolve the domestic problems which prevent us from meeting those goals.

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[1] See p. 280 for Ms. Elder's prepared statement.

First the EPA must, as an agency, commit the political will and the resources at headquarters at the Great Lakes National Program Office and at the three affected Regional offices to meet the goals of the Agreement. This means assigning specific responsibilities and the authority to carry out those responsibilities to the Program Offices and the affected Regional Administrators and the Office Administrators. If air and water quality, or hazardous waste management policies and programs are in conflict with the goals of the Agreement, this means modifying those policies at the highest level, in addition to translating those policies at the state water quality program level and the individual permit level.

Secondly, Congress must authorize and appropriate sufficient funds to carry out the many new obligations under the 1987 Agreement as well as the old obligations under the 1978 agreement. The current appropriations for the Program Office, which include a base operating budget, as well as money for the sediments clean-up program and toxics monitoring and surveillance program, both called for under the Clean Water Act, are insufficient to cover the additional obligations, which among other things include: establishment of pre-treatment requirements for all industrial plants discharging waste into publicly owned treatment works by the end of 1982; requirements for the substantial elimination of discharges into the Great Lakes system of persistent toxic substances by the end of 1983; development of implementation of Remedial Action Plans for areas of concern; development and implementation of Lakewide Management Plans for open lake waters; identification of point source impact zones by September 30 of this year; monitoring capable of determining the total pollutant loadings to and storage and transportation within, and export from the Great Lakes system; contributions of various exposure media to the overall human intake of toxic substances in the Great Lakes Basin Ecosystem and further development and use of reproductive, physiological and biochemical measures in wildlife, fish and humans as health effects indicators and the establishment of a comprehensive data base for storage, retrieval and interpretation of the data, as well as developing and implementing watershed management plans for non-point pollution, and a standard approach and agreed upon procedures for the management of contaminated sediments by December 31 of last year.

They are also supposed to conduct research, surveillance and monitoring and implement an entirely new pollution control measure for the purpose of reducing atmospheric deposition of the toxic pollutants or toxic substances, particularly the persistent ones, to the Great Lakes Basin Ecosystems.

This is an incomplete sampling of the obligations under the new annexes, but I can tell you that we cannot expect the Program Office to do all this work with $13 million and without the specific authority to reject permits and programs which fail to meet the goals of the Water Quality Agreement.

It is naive to assume that EPA will simply request additional millions to carry out these obligations when worthy existing programs are strapped for funds. Even if EPA wanted to seek additional funds, the heavy hand of OMB would most likely prevent them from doing so. Therefore, Congress needs to take the lead on this issue: establishing their authority, providing appropriations and following up with strict oversight, such as this hearing.

I would also like to take this opportunity to address one of the most serious pollution problems facing the Great Lakes: toxic air pollution.

Even if we were to successfully clean up all other sources of pollution in Lake Michigan, we would only be solving half of the problem. The IJC tells us that up to 50 percent of the toxic pollution in the lake is coming from the sky. What goes up, comes down in fallout and washout in rain and snow. PCB's, lead, mercury, DDT, dioxins and furans are among the most infamous in the mix, but there are likely to be hundreds of other chemicals. The IJC estimates that 1,000 toxic chemicals have been found in the Great Lakes.

In the United States the EPA only regulates eight toxic air pollutants under Section 112 of the Clean Air Act. Thus, the atmosphere has become the last legal dump for compounds we strictly regulate in water systems and even in landfills. The Congress and the Administration have at last realized that the current program is insufficient to protect human health. The Senate is now considering S. 816, legislation which will address toxic air pollution in a much broader and more comprehensive fashion than current programs allow. However, it still falls short of adequately protecting human health and the environment.

The bill's sponsors do deserve credit for recognizing the need to shift away from a rigid risks-based program that we currently have to a broad technology-based program for swift cleanup. Definitions of best-available technology in the legislation, though, may allow less than the very best to be put in place. Chemicals that threaten our lungs and our food and water supplies with potentially devastating effects must be dealt with in the most stringent fashion and with the most effective control technologies available.

Carcinogens, the cancer-causing chemicals, should be ratcheted down to zero emissions. Both the Monsanto Corporation and Union Carbide have already pledged to do this. Other industries should be required to meet this challenge. Residual risk to the exposed public should not exceed one cancer in a population of 1 million per year. The current legislation would allow one cancer per 10,000 per year, which is roughly the risk level associated with living and breathing the air in Southeast Chicago, one of the most heavily polluted areas in the United States. Clearly this is an unacceptable risk level as a standard for America.

But not all toxic chemicals cause cancer. As we are learning from the Great Lakes fish and wildlife, some cause birth defects or suppress fertility, cause neurological damage or a host of other effects. EPA must be required to continue to identify these particularly hazardous chemicals and the same zero discharge strategy needs to be applied to them. A good list to start with is the IJC Critical Pollutant List.

A closer look at that list reveals that many chemicals are on it which are no longer used in the United States but are still major contributors to lake pollution. Where are they coming from? PCB's are ubiquitous in the environment, languishing in the old landfills and the bottoms of many Lake Michigan harbors as well as leaking from storage sites. Waukegan Harbor's contaminated sediments may indeed be the largest known point source of airborn PCB's. Atmospheric scientists have suggested that a significant portion of the PCB's now found in Lake Superior are actually coming from Lake Michigan evaporation. Thus, a comprehensive cleanup must go beyond the familiar industrial or mobile emission sources.

New DDT has been found in the Great Lakes in recent years. We know it is new because DDT eventually breaks down into DDE. Our domestic contaminant load should be well-advanced in this break-down process by now so where is the new DDT coming from? Probably Mexico or Central America, possibly even India or Asia where DDT is still actively used.

In summary, a good clean air strategy for the Great Lakes will include a best available control technology program, a goal of zero discharge for particularly hazardous chemicals, minimal public cancer risk from residual chemicals as well as a recognition that both human lungs and the environment at large require protection from these pollutants.

In addition, any successful strategy for long-term cleanup of the Great Lakes must also include an international agreement to control toxic substances which are easily airborne and distributed throughout the global atmosphere. Thus, the Lake Michigan and the Great Lakes solutions will require international, Federal, State and local effort, but Congress has the opportunity to drive this effort, and we urge you and your other Great Lakes colleagues in Congress to do so. Thank you.

Senator KOHL. Thank you, Ms. Elder. Dr. Ludwig, I would like to ask you a question. This past Sunday in the Milwaukee Journal Ron Leys speculated on muskies and walleye in the Milwaukee outer harbor and whether or not we soon would have the opportunity to catch and eat these fish from the Milwaukee Harbor and from the Milwaukee River. He talked about the possibility of having a body of water that would be clean enough to accommodate this type of fish. Do you have some comment to make on that in terms of the possibilities of catching and eating so many of the fish which are now banned?

Dr. LUDWIG. Yes. First of all, let me say that the answer to that is rather complicated. You and I are literally right now—from the biological perspective—are essentially irrelevant to our species. We are done reproducing. We are both surrounded at this instant by 40 young women who are capable of reproducing and may well do so. For us to catch and eat those fish today, there is probably no greater risk to us than might occur from smoking a cigar or being in a room with someone who is smoking cigarettes, for you and me. But for these women around us, catching and eating those fish far into the future is likely to be a risk not to themselves but to those generations yet unborn.

The answer is we are regulating the wrong things here. We are regulating carcinogenicity, with all due respect to Ms. Elder, and what we should be looking at is reproductive damage. If you look at the kinds of things that are coming out on the Great Lakes now, we find that every wildlife species that depends upon fish in the Great Lakes, that has, in fact, been examined, for every single one of them their reproduction is damaged. Some of them like mink and otter that are very sensitive are extinguished within 5 miles of the edges of Lake Michigan as breeding species. They simply cannot tolerate any Great Lakes fish.

That is the kind of thing that worries me much more than whether or not we have one cancer in a thousand—in 10,000 or one cancer in a million. If we have the perspective that we are going to worry about our fate as individuals instead of worrying about our fate as a species, we have the wrong perspective. I think this goes back to the Delaney Amendment back in 1957 which set up cancer as a public health goal, to control cancer and control the substances in the diet that would lead to cancer. And, I think we have unfortunately taken that over into all of our regulatory programs as a driving paradigm for all. It is the wrong paradigm. It might interest you to know that since World War I in North America the infertility rate in this country has quadrupled. I do not think it is an issue of social factors. I think there may well be a component of the pollutants that we eat in our food, which would come through things like fish. And it does not affect you and I. It affects women of this age.

Senator KOHL. Well, I agree, and I think we all fully agree with what you are saying. What I was trying to get at is your estimate of the possibilities of having fish in the Great Lakes that would be free of those contaminants.

Dr. LUDWIG. My best guess is we are looking at a matter of decades with the best control technologically for Lake Michigan. And the reason for that is very simple: The worst of these contaminants tend to partition themselves into the water itself, not the sediment, not the air, but partition into the water and stay on the material that is biodegradable in the water. Lake Michigan has 99 years to replace the water that is in it. That is how long it takes for it to accumulate enough water from the watershed and rainfall to replace the water that is in it. Considering the levels of pollution and problems we have right now, the change is essentially 1 percent per year. You are going to look at a very long time to clean up Lake Michigan even with the best control technologies.

So what I have to say to you is that for old devils like you and I, it is fine. We can eat the fish right now. But for those individuals that want to reproduce, they had better be very careful for at least two generations.

Senator KOHL. How important do you think it is, in terms of what you are describing, that we get at this problem just as quickly as we can?

Dr. LUDWIG. Absolutely critical. We are 20 years behind the times. We made all sorts of assumptions as regulators and scientists, and I among them made the same assumptions years ago that these problems will clean themselves up, that these materials will break down, and they have not. Time is a wasting. And, I honestly think that an approach of improving the funding of the EPA from the current level would help, but I think they are going to have to go back on the original discharges through the CERCLA rules or something similar in order to get the money to do that. We are talking probably in the range of hundreds of millions of dollars to do this.

Senator KOHL. Ms. Mudd, will you talk to us about the RAP plan that you have been working on in relationship to the EPA and the contacts you have or have not had, and the assistance that you have gotten or have not gotten?

Ms. MUDD. Certainly, Senator Kohl. Over the last 3 years citizens in the Milwaukee area have been asking questions about the status of the Remedial Action Plan or RAP here in Milwaukee and what is going to happen and when it is going to be completed or even when it is going to be started. And most of our contacts, frankly, have been with the DNR here and in the Madison headquarters. And the answer that we have gotten whenever we asked about why things have not happened or what the status of something is is that EPA's grant for this position has not come through, or EPA did not approve enough of an increase that we could actually deal with the Milwaukee Harbor. The answer has been that the funds have either been shifted to Sheboygan, Green Bay or not enough funds were allocated to deal with Milwaukee's Harbor. So it was always a funding and staffing level excuse that we have gotten as to why there has been no progress up until today's announcement on the Milwaukee Harbor RAP.

I honestly cannot sort out who is really at fault, and I am not sure that that would even be very productive if I could. But the long and short of this is that to date there is no plan for how to clean up or even what the cleanup will look like of Milwaukee's Harbor. There is not yet a citizen advisory committee or a technical advisory committee that has even been appointed to make those decisions or make those recommendations for the cleanup of Milwaukee's Harbor. I wish I could give you more specifics, but unfortunately there has been a lot of finger pointing and no results.

Senator KOHL. Is the promulgation of that RAP the first essential step?

Ms. MUDD. If we are going to clean up the harbor, yes, because we need a plan that will determine what level of cleanup the community wants. In other words, do we want to set as a goal for ourselves that we will be able to eat the fish again in Milwaukee's Harbor? Do we want to set as a goal that we will be able to drink the water? Do we want to be able to swim in the waters? Those are decisions we have to make to form a plan, and that will then determine what sort of cleanup is necessary, what sort of restrictions are needed on nonpoint pollution, on industrial and municipal sources of pollutants and, frankly, on changes in behavior of both citizens and companies with our discharges.

Senator KOHL. Ms. Elder, we have a chart showing all the RAP's around Lake Michigan, and there are 10. Of these 10, only the one in Green Bay is final. Three more have reached the major milestone of having been submitted in draft form to the IJC for review, and six have not made it that far. That means that 6 out of 10, almost two-thirds of the RAP's on Lake Michigan, are way behind schedule. What do you think the problem is?

Ms. **Elder**. Well, among other things, there is no hammer.

Senator **Kohl**. Hammer?

Ms. **Elder**. Hammer. Nobody gets in trouble. There is no sanction, no punitive damages. If we fail, no one gets into any kind of trouble. You do not stop permits from being renewed, you do not stop funding from coming in. We just keep doing business as usual.

In addition, there is no U.S. Federal law that requires the RAP process. This is in many ways a unique voluntary program right now with States in cooperation with the International Joint Commission. But there is no uniform set of deadlines, standards, definitions of how clean is clean, sanctions, anything. In many ways it is incredible to me that the process has moved along at all because people are not required to do it. And I would think the next logical step in U.S. Federal policy would be to look for opportunities to codify the RAP process and cleanup standards and deadlines in U.S. Federal law because at least on the U.S. side of the border, we find that without those kinds of deadlines and sanctions and requirements, you get the missed deadlines that we have here.

But even with Federal law, we have the Waukegan Superfund site. It has been a Superfund site since 1983 and not a handful of the toxic mud at the bottom of that harbor has come out yet except possibly what they have removed for analysis and sampling. So even with the law behind us, we have some serious delays in getting federally funded programs working on the Areas of Concern. But I would think a first step for getting some uniform deadlines would be codifying the RAP process.

Senator **Kohl**. So you are both describing a process which is entirely voluntary, staffed largely by volunteers, for which there are no responsibilities in terms of missed deadlines and no penalties, something which you describe as—and I quite agree as serious as this whole process is, being handled in a way that—would it be fair to use the word unprofessional?

Ms. **Elder**. Yes.

Senator **Kohl**. I guess I would go back to my experience in business. Things that were important were always very clearly specified with deadlines and penalties and responsibilities, all things that we understand. As I understand your description of what happens here, none of those kinds of disciplines exist.

Ms. **Elder**. I think to carry your business analogy further, too, we do not know what the bottom line is. We do not know how to determine, when we have reached "clean" and whether what is defined clean for Milwaukee would be clean enough for Detroit or the Niagara River, or whether they will be integrated into larger lakewide management plans in a way that we can achieve the lake water goals.

As I said, I have been encouraged that they have come along as far as they have because of the voluntary nature of the program, but we do not know what the bottom line is.

Ms. **Mudd**. I think Remedial Action Plans are one example of this problem that really cuts across the implementation of the entire Great Lakes Water Quality Agreement. The fact that EPA has taken so little action on air toxics in 18 years, even under the new annex with the Great Lakes Water Quality Agreement that specifically deals with air toxics; the fact that the water quality standards throughout the region are different, to say the least, and as your chart shows, allowed significantly different levels of very hazardous materials to come into the waters from different States, these are symptoms of EPA's, frankly, not dealing with the Great Lakes Water Quality Agreement as if it is a serious document that they actually have to implement. It is done in a haphazard fashion. GLNPO does not have the resources and Region 5 usually leaves it up to the water area at least to deal with these water problems. And it has not been done in a consistent fashion, in an orderly timetable that tells us that we will ever achieve the goals of the agreement. There is no timetable that tells us that even by the year 2000 we will have water that is drinkable or fish that are edible.

Senator **Kohl**. Okay. Do you want to say something, Dr. Ludwig?

Dr. **Ludwig**. Yes, I would like to suggest that is why I was concerned that it would not necessarily help to pour more money into EPA directly. First you have got to pour in the responsibility and you have got to pour in the deadlines and you have got to pour in penalties. I, like you—you were a large businessman and I am a small businessman—I work on deadlines. I have yet to meet an agency staff person who really works the same way in any agency because that is not the way agencies operate. Deadlines are something to almost be ignored. And it really does not seem to me to do much good for a committee like the Oversight Committee to establish another deadline if there is not some actual stringent requirement also put in there that there will be a penalty.

Something you might consider. If something does not get done on time, why not reduce some people a grade? When you were a businessman and you had an employee that did not perform a job on time, you either found a different job for them to do or disciplined them somehow. And the Federal Government does not do that. Each State government does not do that. Somehow or other accountability has got to be put into this.

Ms. **Mudd**. Could I give one short example on Dr. Ludwig's point? It will be short. We fought for 8 years in Wisconsin to get water toxic rules in place. It took us sending a 60-day notice that we were going to be filing a Federal lawsuit that would have had the impact of having the Wisconsin DNR's $2 million a year from EPA for its water program taken away, for the State and EPA come to an agreement that they were going to move ahead with water toxic limits for Wisconsin. That was not a suit that we filed lightly or that we frankly were happy to have to do, but it took that sort of action by a citizen group to get action by the Federal and State agencies.

Senator **Kohl**. I would like to ask all of you to respond to this question, or any of you. The Milwaukee RAP was supposed to be done by October of this year, but now we are told that at least 2 more years will go by. Do you believe it is technically possible to meet the 1991 deadline? And do you have any confidence that it will be met?

Ms. **Elder**. Well, being in that there are no standards for how complete the RAP is supposed to be other than informal review by the IJC, it is hard to say what level will be accomplished. I think a lot can be done in 2 years. But the question of whether or not the final product will be comparable to the Green Bay RAP or the emission RAPs is hard to judge because it is a very subjective process.

Dr. LUDWIG. I think for the magnitude of the grant you announced, the answer is no. Add a zero to it, the answer is possible. One person is what you are talking about, a grant for one person for 1 year. It will take one person nearly a year to get organized. If you want to accomplish that kind of a thing on that kind of a schedule, given the complexities that I have been informed about in this particular estuary, you will need to apply about 10 times as much money and have about four people full-time working on it for 2 years.

Senator KOHL. I would like to give you a chance to respond to what must be on your minds frequently in your business. What you seem to be driving at today, or what I hear you saying, is that many, many people who are not as sensitive as you are to what is going on are making an enormous mistake in terms of the way in which we conduct our lives and our business because the kind of pollution that we are pouring into our environment will eventually do us all the worst kinds of damage, and that time is running away and people in positions of great responsibility do not seem to be willing to listen or willing to do what you believe needs to be done. Would you expand on that in most common, laymen type of language?

Ms. MUDD. Certainly. I think you have gotten our message loud and clear, Senator Kohl. We are concerned because there are decision makers at both the Federal and State level and in the private sector, there are numerous individuals who do have the power to change the current situation. Those are officials at the EPA, officials at the State DNR and officials throughout the private and public sector who have the opportunity to turn the situation around, who have the opportunity to reduce the use of toxins and thus the disposal of toxins into our environment. And what concerns us is that those individuals seem to choose time and time again to take the easy way out of decisions, to delay and put off the decisions to make needed changes in our behavior.

And the problem is that the consequences mount the longer we delay action. The longer we allow toxins to come into the Milwaukee Harbor, the more toxins there will be to clean up, the more fish there will be that cannot be eaten or that, hopefully this does not happen soon, but cannot reproduce, the more animals there will be that will be driven further away, the more species degradation there will be to wildlife and humans. Until we decide that we are going to take action, the problems will just get worse, in the costs and the time and the human resources that will be needed to turn those problems around.

So it is our belief that unless we want this to become a greater and greater percentage of our resources that we are going to have to devote to turning the problem around, we need to start out, and officials at EPA and the private sector need to take this challenge seriously and need to look at ways of reducing our use and thus our disposal of toxins into the environment. It can be done.

Senator **Kohl**. Dr. Ludwig, you want to respond?

Dr. **Ludwig**. I guess I have to answer that from a point of view of a research scientist. And I alluded to it in my statement very briefly when I said there are times when I think the agencies do not want to hear any evil, see any evil or research any evil. I think we have to remember that all organizations come to be represented within their own structure by organization and by behavior that is designed to make their lives easy rather than to do the mission of the agency or the structure for which that structure was put in place, its purpose. I think we constantly have to stir the pot and make sure that the agencies are, in fact, addressing the right problems. I am horribly frustrated right now by the fact that I cannot get the EPA even to acknowledge that there is a real problem with toxic substances in the Great Lakes that cannot be regulated under the regulatory structure of 15 years ago and those assumptions. And yet there is an abundance of scientific evidence that shows those assumptions are all wrong. But the structure you see is in place, and it is so convenient to keep doing business the way we have done it in the past. And because there is no responsibility attached to making the wrong decision, as there is in business, then you continue to make the decision that makes your life easiest. And I do not know how you address that in government, but I think that is the crux of the problem.

Senator **Kohl**. Ms. Elder.

Ms. **Elder**. Just a quick comment. Something you brought up, Jim, from our recent week in Washington, the question of who is in charge. If we knew who was the ultimate authority in an agency, and let us say the EPA, for implementing the Water Quality Agreement, we could go to that individual and argue our case, and if we failed, we could even take it to court.

But we wrote a letter, the Sierra Club and the Wildlife Federation wrote a letter and Great Lakes United wrote a letter about 8 weeks ago asking to sit down with the regional administrators from Regions 5, 2 and 3 and the head of Great Lakes National Program Office, the Division Chiefs for Air and Radiation, Water Quality, Superfund and various divisions within EPA, to sit down and discuss that subject: who is in charge and what is the level of authority? Who makes these decisions?

Well, it has been 8 weeks and none of the organizations have received a response, which was most discouraging. But we will continue to try to seek out this year who is in charge. And where does the authority lie? Because if we at least develop that minimum level of accountability, we can begin to take additional steps. But at this point we are, you know, many years down the Great Lakes trail without a clear sense of who really is in charge, who is calling the ultimate shots on water quality, air quality and the long-term clean-up programs. It is fragmented in many agencies, and it is fragmented between the State, local and Federal Government. But if we could have one place we could go to, that would be a big step in the right direction.

Senator **Kohl**. Well, I think your testimony has been informative and dramatic and quite moving. And I thank you very much for coming.

Our next panel is composed of two public officials, I hope. I see one. The man we have here with us today is Mr. Lyman Wible, who is the Administrator of the Division for Environmental Quality under the Wisconsin Department of Natural Resources. Mr. Wible, we are very happy to have you here today, and we would be very pleased to hear your statement.

TESTIMONY OF LYMAN WIBLE, ADMINISTRATOR, DIVISION FOR ENVIRONMENTAL QUALITY, WISCONSIN DEPARTMENT OF NATURAL RESOURCES [1]

Mr. WIBLE. Thank you, Senator. I barely know where to begin in light of the testimony you have just heard. Maybe I should begin on something we can all agree on. Maybe I should begin by reiterating the importance of the Great Lakes. As you have already pointed out, it represents a high proportion of the United States' fresh water. In fact, it is an astonishing proportion of the United States' fresh water.

If we had the Great Lakes water spread across the entire United States, it would be a swimming pool 12 feet deep. If we had in the United States—well, if I had here five pitchers of water like that one, and those pitchers of water represented all the fresh water in the world, one would be the fresh water in the United States, and the entire pitcher, but for this small amount, would be in the Great Lakes. This small amount would represent, in proportion, the Ohio River, the Mississippi River, the Kentucky Lakes constructed by the Corps of Engineers, Hoover Dam, its contents, and the lake behind Hoover Dam, Lake Mead, Lake Tahoe, all the other fresh water resources, the fresh waters in California, which are the sources of the water wars in the west. This pitcher would be, however, the Great Lakes resource. So the Great Lakes is certainly a very important resource.

We recognize this. We wish that the Environmental Protection Agency at its headquarters level recognized this. We believe that the Environmental Protection Agency Region V understands the importance of this.

The amount of water which leaves the Great Lakes—again talking in proportions, the amount of water which leaves the Great Lakes, if that were the entire content, could go in about half of the cap to this pen. The amount of water which is the source of all the contamination which we are talking about might be a drop or two drops of water into that pitcher in a year. So again half the cap of this pen would represent all this water flowing over Niagara Falls and out the Saint Lawrence Seaway.

The Great Lakes is a tremendous resource and it is uniquely sensitive to pollution as evidenced again by my acknowledging that simply a drop of water in that pitcher would represent all of the billions of gallons discharged every year into the Great Lakes from municipalities and from industries and from private sources. So it is a very large system, and yet it is a very sensitive system.

With regard to the questions which you have raised for me to address, I will go over them fairly quickly because there are some other points I would like to make. And again, for the record, I will be departing from my prepared comments and highlighting some of the points in my prepared comments.

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[1] See p. 249 for Mr. Wible's prepared statement.

Lake Michigan generally is viewed as a system in recovery. It is viewed as a system which still has problems from toxins. We think that many of the successes in the Great Lakes, successes on phosphorus, successes on conventional pollutants, are a result of the sort of partnership, the delegation relationship between the State and the Federal Government, the States and the Federal Government and between local government and the States.

We think that there are models, for example, in the conventional pollution control program for water pollution that demonstrate a high degree of compliance, for example, among the dischargers. In Wisconsin we have 94 percent of the municipal dischargers, 98 percent of the industrial dischargers fully in compliance right now with their discharge permits for conventional pollutants. This has taken since 1972. Now we enter the age of toxics pollution control. We think this is ultimately possible for a high degree of compliance with toxics limits as well, but it is going to be a long and difficult effort to get to that point.

We do have contaminated sediment, which becomes an issue with dischargers when we talk about regulating them. They raise the point that, in fact, pound for pound you are spending a tremendous amount of money to regulate a very small contribution of point-source discharge of pollutants.

We have problems with airborne deposition, and I could not make the argument any better than Jane Elder and the others have made earlier about importance of airborne depositions and toxins.

We have problems from nonpoint source pollution. I cannot over emphasize the importance of this sediment problem which we have talked about today. The roughly 200 years of European settlement in this country has resulted in many historic discharges of pollution to the system. As I have noted, it is a closed system. A very modest proportion of the system gets flushed out each year, and the sediments, and the toxics remain in that system. So it is a very sensitive system and a difficult one to clean up overnight. So obviously it took 200 years to create the problem, we are not going to solve it immediately, but these sediments are basically where many of these pollutants reside.

There is a great deal we do not know about these sediments. There is a great deal we do not know about the impact of these sediments on human health; for example, the question of whether cancer is the proper end point. We are certainly willing to consider other design end points for toxic pollution and control equipment and more stringent limits. We are willing to consider those if there is some information available to help us make those judgments. And we are not asking for iron-clad, air-tight science here. We are interested in science which there is a reason to trust. And that sort of information is not being made available generally to the regulatory communities such that we can act on them. In time we certainly hope to do that.

With regard to EPA's contribution, there is an important need for coordination by the Environmental Protection Agency in its programs. EPA has undertaken actions, for example, at headquarters for the development of a national coastal management policy, at headquarters for the development of sediment criteria. At the region in Chicago they have undertaken the development of assessment and remediation of contaminated sediments, which is a name for a project in which they are attempting to set some guidelines on "how dirty" is a "dirty" pollutant or a "dirty" sediment and "how clean" is a "clean" sediment, and what constitutes a suitable end point for cleanup of contaminated sediments. However, all of these initiatives being undertaken by EPA—as well as initiatives in Superfund, the hazardous waste program, other programs—have to be coordinated, they have to be focused, and they have to be integrated with an emphasis on the Great Lakes sensitivity, the uniqueness of the Great Lakes system, if, in fact, EPA is to accomplish its potential in these areas.

With regard to EPA's assistance to Wisconsin in developing Remedial Action Plans, I would make several notes. First of all, I think it is been properly characterized that Remedial Action Plan development is essentially a voluntary process right now. In Wisconsin we think it is important, and for that reason we have incorporated the Remedial Action Plan of Green Bay for example, a completed plan, into the statewide Water Quality Management Plan. It is been recommended to the EPA, to Region 5. The plan has been sent on to the International Joint Commission. We will operate on the premise that that is a part of our statewide Water Quality Management Plan and therefore, effluent limitations, construction grants, all the many other actions which we take from day-to-day in our programs will be driven by that plan. And so the development of a Remedial Action Plan sets the stage for some very important regulatory, technical, and financial assistance programs.

At the same time I emphasize it is strictly voluntary. Congress has given us and the Environmental Protection Agency a great many deadlines, a great many work items which we do have to meet particular deadlines on. And moreover, we have seen Remedial Action Plans which have been rushed. For example, there were seven Remedial Action Plans submitted for review at the time that the Green Bay Remedial Action Plan was submitted. Six of those plans were later withdrawn because they were not developed as comprehensive Remedial Action Plans, and they did not address the array of local concerns that were presented in the Remedial Action Plan in process. We did do that in the Fox River and Green Bay, and we believe that that was the reason why our submittal did proceed and has now gone all the way to the U.S. State Department.

As for who is responsible for implementing that plan, we think that the Environmental Protection Agency at headquarters and at the region should embrace those Remedial Action Plans and should adjust work plans and adjust schedules and grant programs in order to assure that we and every other State with a Remedial Action Plan will proceed to implement that as quickly as possible with the resources available.

Every day we wait is a potential environmental problem. Yet, every day we wait brings us some potential technical advance and some additional scientific insights, potentially saves us a great deal of money in resolving these problems. So it is a difficult trade-off.

Certainly we do not propose to sit on our hands and wait for some technical fix that will solve all these problems. We have to proceed with the information we have, but we also have to proceed with the people we have. EPA has provided assistance to Wisconsin in the development of Remedial Action Plans. You have mentioned already the announcement of an award for two grants to advance the Marinette and Milwaukee Remedial Action Plans. We applaud that grant. We are pleased to have it to work with, and we think that will help us certainly to advance the Milwaukee RAP.

We also want to thank you for holding this hearing. We think that may have played an important role in the timing of the announcement of that grant. So we look forward to advancing those Remedial Action Plans in Marinette and in Milwaukee.

I would like to emphasize that the Remedial Action Plans certainly are a very important part of the cleanup of any of those so-called areas of concern like Milwaukee, Sheboygan, Fox River and Menominee. There are other programs, however, with longer histories which are already in effect and working. Milwaukee is spending a great deal of money, and we are assisting. It is been about roughly a third Federal, a third State and a third local to construct a $1.2 billion Water Pollution Abatement Program in Milwaukee. We think this will make some engineering history, frankly, and position Milwaukee for a very sound environmental setting and for continued economic growth in the future.

In Milwaukee, in the Milwaukee River watersheds there are five watersheds designated by the State for the implementation of nonpoint source pollution controls. Talking in general terms of $3 million per watershed, that is about $15 million, some of which is already beginning to flow. The balance will begin to flow at the conclusion of the plans, again for nonpoint source pollution for the watersheds. Planning will be concluded by 1990. The final watersheds, two of them, are proceeding and we think that is a very important feature in the cleanup of Milwaukee's Harbor.

We do not know whether the nonpoint source control and the point source control associated with the Milwaukee Metropolitan Sewerage District Project and the potential impacts of urban storm water permits as required by the Environmental Protection Agency—and we are now proceeding with implementation of that—what we do not know is whether those actions will all accomplish what is necessary to achieve the goals of Milwaukee, as a community for the harbor. In fact, we do not know with great precision what goals Milwaukee, Greater Milwaukee community holds for the plan. We think that is an important element of the remedial action planning process.

It has taken us almost a year to convince the Environmental Protection Agency that that is an issue. There was a perception that having spent $20 million on facilities planning and having developed a nonpoint source program in the State level, all we would have to do is staple together some historic existing reports, stamp that a "Remedial Action Plan" and the planning process would be complete.

We think there is a great deal more than that to it, but we do want to acknowledge EPA's contribution in the provision of these grants and the staffing which plays a very important catalytic role in moving these projects forward. It would be a mistake to try to do this project, the Remedial Action Plan for Milwaukee, exclusively with assigned staff like the position we have been talking about. It is essential that fish managers, wildlife managers, parks and recreation specialists and a great many other sanitary sewerage engineers, solid waste and Superfund engineers are all involved in the development of this program so that we do not miss some issues that need to be addressed. If we are going to have an effective program that gets the results, as everybody in this room wants, we have to have a comprehensive and meaningful program, and it has to be done in a way that we listen to what the community is telling us about their expectations and hopes for this process.

We have learned over the years that the implementation of such plans, once the plans are developed, will require a continued commitment of money, a continued commitment of staff, a continued commitment of program activity in the annual work plans of the agency, as I have made reference to the EPA's oversight of that activity. This will also require a continued commitment to certain program development.

Contaminated sediment is a problem which has not been solved and may not be solved as a program, may not be developed as a program for another 10 years, but we have to keep working on that. That will require a political will in order for the Congress, for example, to acknowledge the differences between Superfund and whatever the contaminated sediment program is going to be. It will require a commitment from Congress, I think, in the long run to "create". Let us put aside the need for money, the question of whether the Federal Government ought to be providing money for cleanup. But what about the criteria? What about the research? What about the process to be followed? Those are the kinds of questions where we think that national oversight for consistency can be very, very helpful. Whether the sediment contamination occurs in Cedar Creek upstream, inland, whether it occurs in the Great Lakes harbors or whether it occurs in the lower Mississippi River, contaminated sediment is a major problem in this country, and there is no Federal program to address it.

I would like to speak a bit to the question of water quality standards for two reasons: One is that there are two sides to every story, and I think you have heard usually more than two sides to every story. You have heard certainly one side of the perspective on Wisconsin's water quality standards. Wisconsin's toxics water quality standards are the first to have been developed as required under the 1987 Clean Water Act amendments. They are the first in the country which have been approved under these provisions. Secondly, we think those are very good standards. They are a good start. Your own chart here demonstrates the degree of stringency, if you will, in the numbers that are there. Other States do not even have numerical values for some of the toxins we are concerned with.

At the same time, there is more to do. These standards were developed in the context of national guidance which was not unique, again, to the sensitivity of the Great Lakes system. We think that when each State in the Great Lakes has the basic authority for toxics regulation, the stage will be set for a really meaningful dialogue about, if you will, consistency or compatibility of different State toxic standards. We think that EPA has set the stage for a meaningful discussion on this, and they have set a very tough deadline.

I know it is been suggested that agency people do not like to set deadlines, but EPA—Region 5, particularly—has set a very tough deadline for a discussion about compatibility or consistency of State toxics standards. If that had been done 2 years ago, for example, it would have saved us, the Wisconsin Department of Natural Resources, a great deal of time and great deal of money. But we have had to break ground in that area, and we are glad we had the chance. If it is going to be done now, we will probably have to participate actively in assuring that there is some degree of compatibility even now at this first stage of developing basic toxics guidance for the States.

But at the same time, we think it is important to revisit these standards. We would be the last to pretend that these toxics standards will stand for all time as they are written. They are a starting point. They are a point of departure. There is a great deal more work to be done on those over the coming years as we find how they work and what the implications are.

At the same time there will be a continuing monitoring. We did the monitoring of the turtle that has the high degree of toxics. We have done the monitoring of the toxic pollutants in fish. We have done the testing of the waters and sediments. So we have tried to provide information on the presence of toxics in the various compartments of Wisconsin's environment. We are participating in—I think it is a $7 million study—the Green Bay Mass Balance Project. We expect to learn a great deal there. But the levels of sensitivity for testing are dropping all the time so we think there will be a lot more information every year as we study this.

Well, I am nearly concluded with my comments, Senator. I would close by saying that we think great progress has been made through Region 5's leadership and delegation relationship with States. We think there remain, nevertheless, some very serious toxics problems; that if we are to address Great Lakes problems in the spirit that everyone in this room would like to see, and that is a very aggressive and rapid-paced initiative, it will require that we have some flexibility and that EPA headquarters, for example, gives more flexibility to the State in the narrow program responsibilities. It will require that EPA allow for some reallocations. And some of the issues will be difficult. For example, there is a great deal of interest in water quality standards for wetlands right now in Wisconsin. That sort of a priority may not be able to be accomplished soon if we are to shift all of our efforts to the Great Lakes. Those are the kinds of difficult trade-offs we will have to face.

The other important point I would like to make—while I want to move quickly—and we have had this discussion Senator earlier today in Green Bay—we want to be sure that we are listening carefully to the interested parties and to the communities as they tell us what they think is important about these Remedial Action Plans. We want to make sure—while we try to keep on an ambitious schedule, we want to make sure, nevertheless, that we are getting a meaningful plan and—a Remedial Action Plan that is on target or meaningful. So it is important for us to keep our ears open and have substantial citizen participation in the process as it proceeds.

I think that covers most of the points that I wanted to make, although I am sure other points may come back in the questions which you may have. I think again with your support and support of Congress and with the continued sort of political support, really grass roots social support environmental programs have been enjoying at least in Wisconsin, and I think really nationwide, we have cause to be hopeful and even optimistic about the future of the Great Lakes, but there is a great deal of work ahead of us. Thank you.

Senator **Kohl**. Thank you, Mr. Wible. Our next panelist is the Honorable John Norquist, Mayor of Milwaukee.

TESTIMONY OF JOHN NORQUIST, MAYOR, MILWAUKEE, WI [1]

Mayor **Norquist**. Thank you, Mr. Chairman, Senator Kohl. I want to start my testimony by pointing out that there are millions of people who live in the Great Lakes Basin, both in the United States and Canada. I was in a conference last week, and there were mayors there from various Great Lakes cities like Duluth, Thunder Bay, Ontario, as well as the Mayor of Montreal. All the water in the Great Lakes that flows out to the Saint Lawrence River flows past his city. There is a tremendous number of people that depend on the Great Lakes being clean. The only reason that the Great Lakes are still clean enough to be useful and clean enough to be beautiful and enjoyable is because we have seen our pollution diluted in this huge body of water that we call the Great Lakes. So the main way that we have disposed of our pollution has been to pump it into the lake and have it diluted with the billions of gallons of water that make up the Great Lakes.

That solution to pollution will not work very long. Dilution does not work forever. And so we have to stop that. Milwaukee has begun to stop that by having its point source program or the Sewer Pollution Abatement Program, in which we are investing a lot of Federal, State and local money. That will help with point source pollution, and some non-point pollution, but there are many other forms of non-point pollution that go in, particularly the erosion pollution. And there is not much being done about that, not enough any way.

The Wisconsin Legislature, about 10 years ago—I was there at the time Senator Flynn and Senator Tom Harnish from Neillsville and I put together a program called the Nonpoint Source Pollution Program, and it was voluntary then and it is voluntary today. That does not really require much of anything. It just gives money to people who want to engage in projects to help control nonpoint source pollution.

The City of Milwaukee took a step forward a year ago last March by putting into place a Construction Erosion Ordinance, and a few of the suburbs in Milwaukee County have now followed Milwaukee's example. Other suburbs are about to follow Milwaukee's example. But the Milwaukee rivershed includes other jurisdictions and the sediments that are at the bottom of the rivershed come from the entire rivershed. The Milwaukee rivershed extends north into Fond du Lac and Sheboygan Counties, Washington County, Ozaukee County and Dodge County. And the same with the Menomonee and Kinnickinnic Rivers which also extend to other jurisdictions. We need to have a real law that deals with the toxins and the pollutants that are being put into those rivers. If we are going to clean up the sediments, we also need to clean up the sources of those toxins and those pollutants so that we do not just pile them back up again.

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[1] See p. 291 for Mayor Norquist's prepared statement.

So I think the most important priority is to cut off the sources of those pollutants. A lot of it is from the urban area, a lot of it is from Milwaukee and Milwaukee County suburbs, and we need to do more than just a Construction Erosion Ordinance. We need to find ways to control the erosion that comes from streets and parking lots and goes into the rivers and carries metals that are in gasoline residue and so forth into the rivers. But we also need to have the northern parts of the riversheds dealt with as well. There is no reason why cattle have to graze in the river. There is no reason why insecticides and pesticides with unsafe levels of toxins in them need to be used on farm fields. Whatever the yield that comes out of that is not worth poisoning the rivers and the lakes with those toxins.

We need to have a nonpoint source pollution program that is more than a pat on the head or a pat on the shoulder. We need to have the Department of Natural Resources and the legislature support a real nonpoint source program.

Now, getting to the Federal program, I think that the Environmental Protection Agency should be commended for getting involved. I think their involvement could be a lot more energetic, and I think they could have gotten involved a lot earlier. And the DNR, of course, is a little bit late on its Remedial Action Plan. But forget about what people did before. Let us get on with the job and clean up the rivers that go into the Great Lakes. Let us get on with this Remedial Action Plan.

We need to have that happen for economic reasons. We always hear about how good it is to have a clean environment because it looks nice—we do not want fish to die or you do not want the birds to die—or something like that. That all sounds like a real idealistic cause. But the fact is the biggest victim—unless we are talking about the final damage that is done to public health, but if you want to look at the immediate-term victim of dirty water and a dirty lake—is the economy. Dirty water and dirty air do not create jobs. Clean water and clear air create jobs. A clean river and a clean lake will provide economic benefits to Milwaukee, to Southeastern Wisconsin and the whole State. And the idea that somehow there is a trade-off between jobs and clean water is just false. It is just not true. And those who argue that somehow jobs depend on degrading water supply are just wrong. The fact is there are thousands of jobs that depend on clean water. The fishing industry, both the sport fishing and the commercial fishing industry depend on clean water. Some of the products that we have right here in Milwaukee, for example, beer, depend on clean water. Many, many other industries depend on clean water. The tourism industry, which everybody cares a lot about in Wisconsin, is a growing industry, and it depends on clean water. You cannot market dirty water to tourists. Ask the mayor of Cleveland when that city had its river catch fire. That did not draw tourists to Cleveland. That did not bring jobs to Cleveland. And even industry, which is supposed to like dirty water, avoids dirty water. They do not want to be in a degraded environment. Jobs are not attracted by dirty water.

So as we clean up the environment, as we make that investment, now that peace seems to be breaking out in Europe and so forth, I am hoping that the Federal Government will stop spending so much money on useless weapons, spending all kinds of money on weapons that are ineffective or unneeded, and start diverting some money into cleaning up the environment. We can continue spending $170 billion and more defending Europe every year and have everybody here die from toxins in our water, and that would not accomplish anything. Besides, there would not be anybody left to work to earn the money to pay for the $170 billion a year.

So it is time for the Congress to devote more and more of its attention to the problems we have at home and to realize that the threat from dirty air and dirty water is greater in many cases than their imagined threat from the Soviet Union and all the other bugaboos that they like to spend money on.

But getting back to what we ought to be doing, what we ought to be doing is cleaning up the water and cleaning up the air. If we do that and if we clean up the Milwaukee River, the Menomonee River and the Kinnickinnic River and stop the flow of toxins into Lake Michigan, we are going to have a really strong economy, and our children and our grandchildren are going to have a strong economy. Because clean water and clean air mean money. They mean tourism. They mean industry. They mean jobs. They mean all the products that depend on clean water.

I also want to mention one other item. The Great Lakes Research Center was part of the Clean Water Act of 1987, and it was supposed to be here in Milwaukee. And somebody in the Michigan delegation got jealous and decided he wanted to put it in Ann Arbor. Well, Ann Arbor is not even on the Great Lakes. It is about 35 miles away from the nearest part of the system, that is the Detroit River, and it is about 60 miles away from the nearest Great Lake, Lake Huron.

If Milwaukee has this Great Lakes center, it would be located right on the lake. And it was all set to come here. And one of the things I would ask you to do, Senator Kohl—Michigan gets a lot. They have got Congressman Dingell who is head of an important committee, and you have got all the different senators, but you can tell them they win a lot of other victories, but this is something that belongs in Milwaukee. We would like to have the Great Lakes Research Center here. It belongs here. It will fit right in with what we already have. We already have, unlike Michigan, a nonpoint source pollution program; is that correct?

Mr. WIBLE. Right.

Mayor **Norquist**. It is not strong enough, but at least we have one and we are starting to work on it, and it has got to get stronger. We have all kinds of other things that we are ahead of them on. And if they are going to study Great Lakes water pollution and they are going to make recommendations to the whole Great Lakes Basin, there is no better place to do it than Milwaukee. And I would hope we can get that started and it does not get delayed any further because somebody—some landlubber in the middle of Michigan wants to have a Great Lakes Research Center in some cornfield. We need to have it right next to the lake.

Let me just summarize by saying the EPA must make Great Lakes pollution cleanup and research—resource management a top priority. This is the biggest body of fresh water in the world, the Great Lakes Basin. In fact, if you do not count the fresh water that is frozen in the Antarctic, I think there is about two-thirds of the world's fresh water in the Great Lakes. And that is something that ought to be protected. The U.S. Government ought to care about that. They ought to care about it at least as much as they care about the particular forms of government all these countries have in the world that they are always trying to meddle with and interchange. They ought to be able to try to clean up the lakes and not worry so much about which party is running which government in which country.

The EPA also must put some pressure on our DNR. They get a lot of pressure not to clean up. They get a lot of pressure from people who want to drag their feet, but they do not get enough pressures to move as fast as possible, particularly on things like nonpoint erosion pollution. So I want to encourage the EPA to put the right kind of pressure on our DNR. We can all work together with the federal government, the State government and local government to clean up the Milwaukee River, the Menomonee River and the Kinnickinnic River so that we can have a great lake that is available to our children and our grandchildren. Thank you very much.

Senator **Kohl**. Well, I would like to ask Ms. Elder or Ms. Mudd or Dr. Ludwig, we have here representatives of government, the people that you would like to address your concerns and your questions to and perhaps get some answers from, if you had an opportunity. Ms. Elder, you have an opportunity to come up here, to ask Mr. Wible a couple questions. And he seems to be saying things that——

Ms. **Elder**. I did not know about this.

Senator **Kohl**. I would like to hear you direct a question or two directly to Mr. Wible and have him respond. I think that would be very interesting.

Mayor **Norquist**. I have got to go back for another meeting.

Senator **Kohl**. Thanks, John. We appreciate your comments.

Mayor **Norquist**. Thanks for holding this.

Ms. **Elder**. I guess my question for the Wisconsin DNR would be knowing that the water quality agreement with Canada discourages, if not forbids mixing zones, why did the State of Wisconsin pursue the zones of initial dilution, which many of us respectfully refer to as ZID's or zones of instant death? Why did Wisconsin pursue that as a water quality control strategy knowing what is in our Water Quality Agreement?

Mr. **Wible**. Well, the zones of initial dilution which are, in fact, incorporated in our water quality standards, are areas which recognize that there is an initial mixing which occurs. This is not an unlimited dilution allowance. It is a very restricted, and I might add, a fairly costly option, within the industry. This was included in our standards because it is a part of the national guidance on how toxic standards can be promulgated. And in fact, quite candidly, there was, of course, pressure for this sort of a solution being incorporated.

The point I would like to make about dilution is this: Some have represented that Wisconsin's water quality standards rely heavily upon dilution. That is, in fact, not the case as far as we are concerned. And we think that it is a major step towards all of the goals which are set forth in the International Agreement.

In addition, along the steps towards international agreement, we have included a toxics freeze initiative in our anti-pollution standards. So I must confess to being somewhat puzzled in the positions taken that "nobody has initiated a toxics freeze". The toxics freeze which we have included does not include the thousands of chemicals or the hundreds of chemicals which some environmental groups have proposed ought to be included, but it does include those chemicals which have a specific bioconcentration factor; in other words, those chemicals which are the most persistent and tend to build up in the sediments to the greatest degree. And that is, I think, about 21 or 22 chemicals which are included essentially as a "toxics freeze" standard.

So the characterization—as far as I am concerned—the characterization of our standards as being heavily reliant upon dilution is an improper characterization. It seems to me that if in the Great Lakes we conclude that zones of initial dilution are not an appropriate method for calculating standards for specific discharges, then it seems to me that if we can achieve that sort of agreement—again going back, Senator, to the question of uniform or consistent standards across the states in the Great Lakes. I think we are going to be open to the discussion about whether or not our standards ought to be modified in order to take that out. That level of agreement has not occurred yet. Other States do not have numerical values for these toxic substances at all, some of the other States. So we think that at that time, while that is certainly theoretically an important issue, right now we do not think that issue is going to make a big difference in the regulation of toxins. There is a lot of work to be done, and in time we can get back and revisit that question.

Senator **Kohl**. Susan.

Ms. **Mudd**. Thank you. I would like to ask Lyman why the DNR, when the water quality rules were being reviewed by the legislature and in other settings, opposed inclusion of a requirement that companies demonstrate that they could not reduce their toxic emissions through toxic use reduction before they are allowed to dump more toxins into the water? This came up in the water toxic rules, and there similarly is no mandate for a toxic use reduction strategy in the toxic air rules, and I would like to know when the DNR intends to change that position and mandate toxic use reduction in all media.

Mr. **Wible**. I think that—if I am remembering the circumstances correctly—the notion which was advanced was that we should require, we should mandate as part of these toxics rules that toxics elimination at the source—prior to the development of a waste water treatment system—should be imposed as a regulation. We felt that at the time that was proposed, it would have been dishonest of us to embrace that concept for the following reason: We had invited in a group of I think roughly 20 people, some environmental community representatives, some from the industry, to speak to—to participate with us in the Wisconsin Waste Reduction and Elimination Committee in order to explore how the State could best accomplish toxics reduction, at the source again, not treatment after the fact, but really toxics prevention. At the time that that was advanced as a proposal, it is my recollection that we had had several meetings with this committee, and the committee's view at the time was that the toxic elimination initiative in Wisconsin should not be a regulatory program. We had invited this committee in and had given them basically a blank slate. We had said "usually we invite you in for a long and detailed technical discussion in the development of regulatory rules. This time it is different." This time we told these people "we would like for you to start with a blank slate and tell us what you think should be done". And at that time the committee had not yet reached a final recommendation. In fact, their final recommendation, when they did reach it, was not to go with a regulatory program but rather with a voluntary program, provision of technical and financial assistance to businesses so that they would not be again in that regulatory bind, and the relationship would be more constructive for them.

I think there are arguments, good arguments, for a regulatory program. There are also good arguments against it. And I would expect when the legislature takes this issue up, they will consider both possibilities. Again in keeping faith with an advisory committee which we gave with no compensation for their time, we thought it was better that we honor the commitments that had been made earlier, that we would listen. That is my recollection.

Ms. **Mudd**. Do you see that position as consistent with the Great Lakes Water Quality Agreement and the goal of virtual elimination of the discharge of persistent toxic substances, regardless of what any advisory committee that does not have the power to make the decision suggests?

Mr. **Wible**. Yes, I do. And I do so because I think that—this goes back to the question of who is in charge, if you will, on the international agreement. The international agreement is laid out as a set of goals. It sets out some long-term goals, and a good deal of the debate which has been occurring between the States, if you will, and the environmental community and others has to do with how quickly these things will happen. It is a question whether a glass is 80 percent full or 20 percent empty.

We think major advances have been made within the last 2 years in the regulation of toxics in Wisconsin, air toxics, water toxics. Within the last 5 years we have developed a Superfund, State Superfund clean-up program. We have established ground water quality standards. Many things have happened in Wisconsin for toxics regulation in the past few years, and specifically the toxics standards 105, 106 and 107 we have been talking about. Those regulations really are a major step forward.

Is it enough and are we done? Only time will tell us that. And I suspect, of course, that there will be more to do. But that is why I believe these are major steps forward rather than embracing the notion that this is a total failure because we have not achieved everything that we should. That is my view.

Senator KOHL. Mr. Wible.

Mr. WIBLE. Yes, sir.

Senator KOHL. On behalf of all of us who live here in Milwaukee and throughout the State, could I ask you to promise us the Milwaukee RAP 2 years from now? Would you do that?

Mr. WIBLE. Yes, sir. We will give it our very best efforts, and we will try to do that. Barring any unforeseen problems, we will do it.

Senator KOHL. Thank you. May I ask you another question?

Mr. WIBLE. Yes, sir.

Senator KOHL. If you had sufficient resources, is there very much that has been said today that you would not like to implement?

Mr. WIBLE. I think there has been nothing said today that I would not favor. I think I am in favor of everything that has been said. It is a problem of resources and resource allocation in our society and resource allocation in the State budgets and Federal budgets.

Senator KOHL. And do you see the problem with this same sense of urgency as you have heard it described today—again we understand the resources are not there—but see the problem with the same sense of urgency?

Mr. WIBLE. I personally believe, Senator, that the sense of urgency you have heard characterized today is probably an understatement. I believe that the long-term sublethal impacts of toxic substances in the environment will not be understood for many, many decades and that prevention is the best solution; that we should continue to press in hearings like this, in speeches and presentations that these ladies make, in the initiatives of State and Federal agencies, we should press with all our might to educate the public, to educate industry to the points that the mayor made, and that is that clean water and clear air are simply sound logic. They are the basis for a sound economy and for health and an intelligent and viable society.

Senator KOHL. Well, let me say I think that what we have heard today has been enormously honest and impressive. And speaking as a U.S. Senator, I am caught up with a sense of urgency with respect to the things that need to be done. And I want to thank you all for coming. I think you have educated a lot of people here today on a very serious and important matter. And so this hearing is closed. Thank you.

[Whereupon, the Subcommittee adjourned at 5:05 p.m., subject to the call of the Chair.]

APPENDIX

STATEMENT OF
VALDUS V. ADAMKUS
GREAT LAKES NATIONAL PROGRAM MANAGER
REGIONAL ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
CHICAGO, ILLINOIS
BEFORE THE
SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT
COMMITTEE ON GOVERNMENT AFFAIRS
UNITED STATES SENATE

GRAND RAPIDS, MICHIGAN
APRIL 28, 1989

Good morning, Mr. Chairman and members of the Subcommittee. I am pleased to appear before you today to discuss Great Lakes water quality, a professional and personal concern of mine during my nineteen years with the U.S. EPA. In addition to my duties as the Regional Administrator of Region V, I am also U.S. EPA's National Program Manager for the Great Lakes Program. I represented the United States in the last two renegotiations of the Great Lakes Water Quality Agreement with Canada. I also serve as U.S. co-chair of the Water Quality Board, a technical advisory committee to the International Joint Commission that oversees the binational Agreement. For many years I have led both United States and U.S. EPA activities to support and to strengthen the Agreement. The Great Lakes constitute almost 20% of the world's supply of surface fresh water. I view United States and Canadian joint stewardship of this incomparable natural resource with the utmost gravity and have dedicated much of my career towards this responsibility.

GREAT LAKES WATER QUALITY TRENDS AND PROBLEMS

In my prepared remarks, I will address the subcommittee's stated concerns today as expressed to U.S. EPA Administrator William K. Reilly in a letter dated April 7, 1989. The first topic I will address is that of Great Lakes water quality, its trends and problems. There have been two general types of problems in Great Lakes water. The first problem involves nutrients that cause excessive growths of algae, oxygen depletion, and taste and odor problems. These conditions reached their worst in the late 1960's and early 1970's. A second problem is the presence of persistent toxic substances in the ecosystem.

U.S. EPA and the States have made substantial progress on both fronts over the past two decades. Nutrient loadings from regulated sources have declined by over 80% in large part owing to phosphorous control requirements. All Great Lakes States have regulations that limit phosphorous in common household detergents, an important phosphorous source. Today phosphorous remains a problem in Saginaw and Green Bays, and in Lakes Erie and Ontario. Nevertheless, the trend in phosphorous levels in these waters is downwards. We have sponsored a demonstration program to increase the use of conservation tillage practices by farmers in order to reduce agricultural phosphorous runoff to the lakes. We continue to monitor water quality to determine if States will need their agricultural nonpoint pollution control programs to meet United States commitments.

Important environmental progress has also been made in reducing persistent toxic substances. Legislation restricting or banning the use of PCBs and certain pesticides such as deildrin, DDT and others led to dramatic declines in the mid-to-late 1970's in concentrations of these substances in fish tissue. However, trend data during the 1980's shows a general leveling off of the rate of decline in concentrations of these contaminants at levels that continue to pose a threat to aquatic species and to human health through fish consumption.

We believe that there may be hundreds of other chemicals to be found in fish tissue, and by direct implication, in the Lakes. Under the Great Lakes Water Quality Agreement, the United States and Canada are jointly committed to systematic review of information on these chemicals, to assess their potential hazard to ecosystem health, to learn their input routes to the Lakes, and to take appropriate control measures. This is a complex and ongoing undertaking drawing on a broad range of U.S. EPA, other Federal, and State programs. As my next topic, I would like to address U.S. EPA progress, and more broadly that of the United States, in implementing this Agreement.

EPA PROGRESS IN IMPLEMENTING THE GREAT LAKES WATER QUALITY AGREEMENT

The Great Lakes Water Quality Agreement is a comprehensive commitment to protect the Great Lakes ecosystem. As the two nations have learned more about persistent toxic substances in the ecosystem, they have renegotiated the Agreement and strengthened their environmental programs to address this challenge. The Agreement has many aspects. I will focus on the two major remedial approaches formally added when the Agreement was most recently renegotiated in November 1987. These two approaches are: Remedial Action Plans for local Areas of Concern ("toxic hotspots"); and Lakewide Management Plans for critical pollutants on a whole lake basis. The development of these plans represent a challenging departure from earlier United States pollution control efforts. Previously, separate programs for water, air, and waste were essentially implemented independently. The process set forth in the Agreement is to call upon a wide range of government agencies and programs to work together to both clean up the Great Lakes and to prevent future pollution.

There are twenty-five Areas of Concern within the United States, and the United States and Canada share five others. There are grounds to believe that these local areas are themselves important sources of toxic pollution to open lake waters. Remedying these local areas will be vital to the health of entire lakes. Under the Agreement and consonant with delegated Federal responsibilities under the Clean Water Act, development of Remedial Action Plans is a State activity. The first seven RAPS were submitted to the International Joint Commission in 1988. 1987 + 3 more in 1989. Six of these remain under review; Wisconsin has added the one relating to Green Bay to its water quality management plan. States have indicated that they will submit seven new RAPS to the International Joint Commission this year, and nine more next year. As they are developed, RAPs will be incorporated into State water quality management plans. This will further serve to focus State and Federal resources on RAPs.

U.S. EPA is supporting States in their development of RAPS in multiple ways. One important way is through program grants to State environmental agencies. Additional grant and contract support for RAP development has been provided through the Great Lakes National Program Office. This Office has also lead studies of environmental conditions in various Areas of Concern, notably including the Upper Connecting Channels that encompass 5 Michigan Areas of Concern and a current major study of Green Bay. An additional major study of contaminated sediment problems in the Great Lakes will develop further information on environmental conditions and remedies that will be available to States for development of RAPS.

I will also speak to progress on Lakewide Management Plans. U.S. EPA and States have developed toxics strategies for Lakes

Ontario and Michigan that set out a multiyear agenda for addressing toxicants on a whole lake basis. There are a wide range of supportive activities to these strategies, including application of regulatory tools, assessment of pollutant loadings, and pollutant modeling. The strategies for both lakes are consistent with the goals of the Agreement. I would like to focus today on the Lake Michigan Strategy.

EPA PROGRESS IN IMPLEMENTING THE LAKE MICHIGAN TOXIC POLLUTANT CONTROL STRATEGY

The Lake Michigan Strategy was developed in 1986. It is a joint effort by U.S. EPA and the States of Illinois, Indiana, Michigan, and Wisconsin to define Lake Michigan toxicant problems so as to develop additional remedies as necessary. There are many elements to this Strategy. I will limit myself to general points. One focus over the last several years by U.S. EPA and States has been revision as necessary of State Water Quality Standards and procedures to ensure comprehensive numeric water quality standards, procedures to derive numeric effluent limits, and "anti-degradation" procedures. These are requirements of the Clean Water Act. In essence, U.S. EPA and the States have been imposing tighter restrictions on toxicant dischargers. In addition, U.S. EPA and States have recently had preliminary discussions about developing model water quality standards to protect the Great Lakes. We are awaiting State responses to this proposal. Based on these responses, U.S. EPA will determine how best to proceed.

A second major U.S. EPA focus in support of the Lake Michigan Strategy has been review of discharge permits for priority toxic pollutants. During Fiscal Year 1988, States reissued 42 major and 157 other municipal or industrial permits for the Lake Michigan Basin. Acute toxicity is addressed in almost 100% of permits; controls on metals are routine. Biomonitoring has taken place at 70% of major dischargers, consistent with a 5 year plan in 1984. During 1988, U.S. EPA tested seven facilities in the Lake Michigan Basin using biomonitoring techniques. Discharges from two have been identified as toxic and their permits will be modified.

Another major U.S. EPA initiative is working on a study of the sources, paths and fates of selected toxic substances in Green Bay. This study led by the Great Lakes National Program Office, the Office of Research and Development, the State of Wisconsin, and the National Oceanic and Atmospheric Administration (NOAA) is critical to determining the feasibility of studying toxicant problems on a whole lake basis and to increasing our knowledge of the extent and relative importance of different sources of toxicants. We need to learn more about the contributions of air pollution, of rural and urban land runoff, of contaminated groundwater and of contaminated sediments so as to help choose the most effective remedial measures under the Lake Michigan Strategy. The Great Lakes National Program Office has also purchased a new research vessel that will be outfitted with analytic equipment to permit open lake water and sediment sampling for toxics. The Office is also upgrading its existing air deposition network to measure toxic pollutants. Both the new vessel and the enhanced air deposition network will be important to understanding Lake Michigan's water quality and the nature of threats to it.

EPA PROGRESS IN ADDRESSING CONTAMINATED SEDIMENT PROBLEMS

Last, I will address the important topic of U.S. EPA progress in relation to contaminated sediments in the Great Lakes. All thirty U.S. Areas of Concern contain contaminated sediments. Evaluating the contribution of these sediments to water quality problems and devising appropriate remedial measures is one of the most difficult aspects to RAP development. In general, the scientific community has not yet studied sediment contamination sufficiently to understand the extent of transport of pollutants from sediment, the water column and ecosystem, or to recommend to responses. One major U.S. EPA initiative to address this need is a study by the Great Lakes National Program Office that will include demonstration projects of promising technologies as well as assessments of contaminated sediment problems in the Great Lakes Basin. Priority will be given to locating demonstrations in areas specified by statute. The design of this study is well underway with technical workgroups including scientists from various agencies. Field sampling of sediments will begin this summer and will address all five priority locations (Ashtabula River, OH; Buffalo River, NY; Grand Calumet River, IN; Saginaw Bay, MI; and Sheboygan Harbor, WI). Benchscale laboratory demonstrations of treatment technologies on sediment samples from these areas will begin later this calendar year. During Fiscal Year 1990, we will plan field demonstrations based on matching site characteristics, promising technologies and remedial options, and the location of complementary activities by the Army Corps of Engineers. Selected projects for each of the five priority locations will be coordinated with local, State, and other complementary Federal programs (including Superfund) to make fullest use of available resources. In addition, U.S. EPA is undertaking a national effort to develop criteria for contaminant concentrations in sediments. Without such criteria, there is no absolute, scientifically derived goals for remedial measures. As a lead U.S. EPA Region for Water programs, Region V is closely involved with this national effort, including technical committee representation and planning the development of national sediment contamination inventory.

This concludes my prepared remarks. I am here today with Carol Finch, Director of the Great Lakes National Program Office. We would be pleased to respond to questions you may have.

TESTIMONY OF DIRECTOR DAVID F. HALES
STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

Thank you for this opportunity to address the actions taken by the Environmental Protection Agency (EPA) to implement the Canada-U.S. Great Lakes Water Quality Agreement of 1978 and improve the water quality of the Great Lakes. I commend this Subcommittee for their attention to the critical water quality problems of the Great Lakes--the largest body of fresh surface water in the world. The Great Lakes basin is home to 15 percent of the U.S. population and supplies drinking water to nearly 24 million people. The Great Lakes define our economy, our climate, our boundaries, our culture--they are the reason we have settled here. Their importance to Michigan, the nation, and the world cannot be overstated.

Background

Control of toxic substances is the most vexing Great Lakes issue today. Sixty thousand chemicals are produced or used in the U.S. and Canada. Nearly four hundred of these chemicals are widely spread throughout the Great Lakes ecosystem and may bioaccumulate in fish, wildlife, and even humans. While the human health effects are not well understood, tests have shown that many of these substances induce a variety of toxic responses in laboratory animals ranging from skin rashes to birth defects and cancer. Studies indicate that the greatest source of human exposure for many of these chemicals is through eating Great Lakes fish.

During the mid-to-late 1970s, bans, toxicant controls, and regulations led to a dramatic decline of some toxic substances.

However, since 1980 the rate of decline has slowed and in some cases leveled off. Many regulated chemicals of known concern are still at unacceptably high levels. This is especially true at the 42 Areas of Concern in the basin--areas identified by the International Joint Commission to be among the worst sources of pollution to the Great Lakes.

Trends

The International Joint Commission's Great Lakes Water Quality Board (1987) reports water quality trend lines are down for most measured contaminants in all of the lakes. However, problems remain. Some contaminants in some lakes exceed the objectives established by the Canada-U.S. Great Lakes Water Quality Agreement of 1978.

The Great Lakes is a huge reservoir of sediments storing and in some cases remobilizing persistent toxic substances. Theses substances readily attach to particulate matter and can be resuspended due to dredging, shipping, wind and wave action, and movement by fish and other organisms. As with water quality, the overall trends for toxics such as PCB and mercury in sediments are down, but contaminated sediment remains a concern.

The trends for chemical residues in fish and birds also show improvement. This is especially notable since they are good indicators of water quality because they bioaccumulate toxic substances even when levels in the water column are below detection levels. Fish may be more accurate indicators of ecosystem health because they are year-round residents of the

Lakes. Most bird species migrate to other areas of North and South America where they may be exposed to different types and levels of toxic substances.

The Water Quality Board outlines trends in fish and bird studies. One of the longest running studies is a Canadian Wildlife Service study of herring gull eggs initiated in 1974. As is typical for the Lakes, they found the greatest decline between 1974 and 1980, with a leveling off period from 1980 to present. They have consistently found Lake Ontario and surprisingly Lake Superior to have the highest levels of contaminants in herring gull eggs.

Other wildlife studies summarized and reported to the International Joint Commission point to effects of toxic substances on a wide range of Great Lakes wildlife These studies document the evidence that links toxic burdens to deformities and lesions in fish. However, "a clear understanding of the role of these contaminants in effecting changes in the Great Lakes biological communities, and the magnitude of the effects, has yet to be developed" (Great Lakes Water Quality Board, 1987).

In general, water sampled in near-shore areas such as tributaries, harbors, connecting channels, and Areas of Concern have higher levels of contaminants than found in the open lake. The Water Quality Board points outs that this "usually directly relate[s] to the particular agricultural and industrial uses of the drainage basin".

Issues and Approaches

With trends down but leveling off, we need to critically assess future directions. We have concentrated our efforts on point source discharge control and we have made substantial--even dramatic--progress. We must continue and even expand this work by applying existing technology and requiring new technologies as they emerge. But if we are to reduce toxic substances in the Great Lakes ecosystem, there are other critical areas that we must address.

Regulations and program initiatives must be pursued so that we can learn to control other sources and pathways such as atmospheric emissions; groundwater migration; runoff of pesticides and other materials from farm fields and urban areas; stormwater; combined sewer overflows; and releases from contaminated sediments. In some cases we may have to pursue additional outright bans on the production and use of harmful substances.

Research, monitoring, and information management need greater emphasis and funding. We must define and eliminate all sources of persistent toxic pollution. We need environmental and laboratory data to assess the biological significance of contaminants. We must determine whether existing regulations have reduced these substances to levels that protect ecosystem health including humans. We need to know the biological effects of these substances on organisms--mammals, birds, fish, and humans, their cumulative and synergistic effects, the relative loadings from air, sediments, direct discharges, and so on.

Clean-up, disposal, and emergency response are critical areas for attention. Even if we stop all new sources of contamination, we must still contend with the slow flushing time of many of the lakes, the limited scope of natural removal and degradation processes, and the persistent nature of these materials. Therefore, we must learn how to get toxic materials out of the ecosystem or control them in order to interrupt their recycling. We must make greater strides in cleaning up toxic substances at sites of environmental contamination. We must foster the development of new clean-up technologies. We must determine if and when the remedial options we select--such as dredging or containment of contaminated sediments--are effective.

We cannot answer these and other questions without comprehensive, cooperative efforts among the Great Lakes states and the EPA. Cooperative ventures must be pursued with vigor if we are to address toxic problems on an ecosystem level. Just as we share the Lakes, so must we share their stewardship. We must support the proactive and preventative efforts in their infancy stage with dollars and people. We must reduce the production of toxic substances at their source. We need to explore the use of incentives and new initiatives to attack toxic substances problems.

Progress Made By Michigan and the Great Lakes States

Michigan Initiatives. Michigan has long been a regional leader in toxic control. In 1969, Michigan was the first state in the nation to ban DDT--two years before the federal government. In 1976, Michigan developed a strong program to control PCBs--three years before the federal program. In 1985, Michigan adopted rigorous new water quality standards to strengthen toxic substances control. Rule 57 requires that toxic materials not be present in the waters of the state at dangerous levels. This rule has received national recognition for its scientifically based criteria. Rule 98, the antidegradation standard, was strengthened in 1986. It ensures that our cleaner waterways stay that way. Rule 98 also designates the Great Lakes as "outstanding state resources" and specifies that toxic discharges must be at safe levels when they leave the end of the pipe, not after they have mixed with Great Lakes waters. These are just a few examples of Michigan's long commitment to improving the management and protection of the Great Lakes.

Regional Initiatives. As mentioned earlier, Michigan cannot do it alone. While awaiting stronger federal programs, Michigan took a lead role in developing the eight-state Great Lakes Toxics Substance Control Agreement of 1986. This agreement was a critical first step in voluntary regional cooperation to reduce toxic substances in the Great Lakes ecosystem. It set a precedent for regional coordination and cooperation among the Great Lakes states. Implementing the Toxic Agreement has led to increased compatibility among state regulatory programs, pioneering cooperative efforts in air toxics, uniform fish consumption advisories, and many other innovative regional initiatives.

Michigan also took a leading role to establish the Great Lakes Protection Fund. The Fund--a first in the nation--is a permanent $100 million endowment for Great Lakes toxic substances research and clean-up demonstration projects. This Fund is expected to become fully operational within a few years. Michigan's $25 million share of the Fund was provided last fall by Michigan voters who approved a $800 million Quality of Life Bond Proposal.

Great Lakes Water Quality Agreement. Michigan also actively pushed for state and public interest group participation in the 1987 negotiation of annexes to the Great Lakes Water Quality Agreement. Formerly the domain of the two federal governments, Michigan was one of three Great Lakes states on the 1987 U.S. negotiating team. We helped refine the Agreement by making it stronger, increasing accountability, and adding substantive improvements to the Agreement. Michigan has supported the Agreement in many ways including an intensive three-year effort to complete our Remedial Action Plans. Michigan has completed--with full public involvement--and submitted nine of the ten Remedial Action Plans being reviewed by the International Joint Commission. Michigan has five more to complete: one is tied up in litigation while the other four are joint plans, three being developed with Ontario and one with Wisconsin.

Progress Made by the Environmental Protection Agency

Lake Michigan Toxic Pollutant Control/Reduction Strategy. The Lake Michigan Toxic Pollutant Control/Reduction Strategy was adopted by EPA Region V and the States of Illinois, Indiana, Michigan and Wisconsin in July 1986. The objective of this strategy is to fully restore the multiple uses of Lake Michigan and to protect human health and the Lake Michigan ecosystem via a significant reduction in the loading of toxic pollutants to the lake. This was to be accomplished by defining and identifying sources of toxicants, quantifying toxicant inputs to the lake, and reducing those inputs. Implementing the strategy was intended to extend over several years as the Region and States gathered information, made program decisions, and began to implement controls. Specific action steps for the Region and the State were included in the strategy. The Region was also to compile an end-of-year status report with the assistance from the States.

The EPA has had mixed success in this effort. Progress reports were completed by the Region for fiscal year 1987 and 1988. In general, implementation of the strategy was on schedule and action steps were completed. However, the critical goal of all Lake Michigan states translating descriptive toxic substance water quality standards into numeric criteria by the end of fiscal year 1987 was not met. Michigan and Wisconsin are the only states which have completed this task as of December 1988 and have established comprehensive water quality standards. While some states look at toxic factors for some permits, this effort was to encourage the states to look at toxics for all permits.

In addition, Region V staff support for developing Lake Michigan Remedial Action Plans--which support the goals of this Strategy--has been disappointing (see Remedial Action Plan section). The EPA is planning to turn the Strategy into the first Lakewide Management Plan by June 1990.

Great Lakes Water Quality Agreement. The Great Lakes National Program Office of the U.S. EPA must move more rapidly to implement the new requirements of the Canada-U.S. Great Lakes Water Quality Agreement (GLWQA) as revised in 1987. The general approach has been to develop plans or strategies to implement the specific requirements of the GLWQA. To date, none of these plans or strategies have been finalized. The new requirements of the GLWQA impose extremely extensive responsibilities and tight deadlines already past. The combination of the extensive requirements and the lack of clearly established priorities has led to the present situation which leaves the impression that nothing has been accomplished.

In addition, it is not clear that adequate coordination is occurring between the Parties (i.e., the two federal governments). This can lead to redundancies as well as further delays while the parties resolve differences in approaches to the various requirements of the GLWQA.

One of the new requirements is the regular reporting of progress by the Parties. The EPA's report--due December 1988--is currently in draft form so it is difficult to fully summarize the agency's implementation of the GLWQA. The following is a brief summary of the status, as we understand it, of several key requirements of the GLWQA. In many cases, the EPA is merely following in the footsteps of pathways established by innovative Great Lakes states' efforts. Often the EPA establishes committees and subcommittees which appear to delay direct action.

The EPA has done a side-by-side comparison of the toxic control goals and objectives of the Agreement with the EPA's ongoing regulatory activities. The EPA found a great deal of overlap which means that most Agreement objectives can be met with existing laws and regulations. The problems not adequately covered by existing programs include contaminated sediments (of special concern in the Great Lakes basin), air toxics, and nonpoint source pollution. Section 118 of the new Clean Water Act specifically addresses contaminated sediments and calls for five critical demonstration projects--including one for Saginaw Bay in Michigan--but none of these projects have been initiated.

The EPA has also established a GLWQA Implementation Committee between EPA and the states. This Committee is looking at each aspect of the Agreement and designating subcommittees to do in-depth work as needed. While it is critical to have a Committee such as this, we hope that the overall EPA effort does not get bogged down waiting for subcommittee reports. The GLWQA has been around for 17 years with the first negotiations completed in 1972 to deal with conventional pollutants. It was revised in 1978 to address toxic pollution. A GLWQA Implementation Committee is long overdue and needs priority attention and funding.

Specific aspects of the GLWQA are discussed in the sections which follow.

Lakewide Management Plans. Lakewide Management Plans for open waters of the Great Lakes are a 1987 requirement in Annex 2 of the GLWQA. Progress by EPA to develop Lakewide Management Plans needs to be stepped up. One subcommittee of the GLWQA Implementation Committee is developing a draft model Lakewide Management Plan (actually written by a contractor). The model will describe what a plan is, how to address each lake, and what should be in each plan. These plans must be designed to reduce loadings of contaminants to restore beneficial uses. An EPA workshop on Lakewide Management Plans was held on April 26 and 27, 1989 in Chicago. However, it is not clear when the Lakewide Management Plan model will be completed. Michigan hopes that the lakewide management planning process will now begin to move at a more rapid pace. The EPA, in full consultation with the states, needs to provide clear guidance about what constitutes a Plan and provide funds to states for any responsibilities accepted by the states.

Remedial Action Plans. Efforts to develop and implement Remedial Action Plans (RAPs) for the 42 Areas of Concern began in 1985. In 1985, the U.S. EPA Great Lakes National Program Office (GLNPO) offered support to the Michigan DNR in the form of contractor assistance to develop draft RAPs for Michigan's Areas of Concern (AOCs). The DNR accepted the offer and the contractor began to draft RAPs for seven of Michigan's AOCs in 1986. Staff from the GLNPO were assigned as EPA RAP coordinators (for all 14 Michigan AOCs) to oversee the contractor's work, provide information as needed, and coordinate EPA's review of draft RAPs.

Draft RAPs were neither timely nor of acceptable quality. As a result, deadlines were missed, and six of Michigan's RAPs were submitted to the International Joint Commission (IJC) ten months behind schedule. The seventh RAP was submitted eighteen months late. Ultimately, the DNR decided to develop the remaining RAPs without the assistance of EPA's contractor.

In March 1987 GLNPO agreed to complete their review of all Michigan's draft RAPs within 30 days in an effort to complete the RAPs in a timely manner. This has not happened. EPA comments have been either late, or not submitted at all. Thus, the RAPs submitted to the IJC for review and comment have been either delayed or without EPA involvement. GLNPO has provided comments on completed RAPs as part of the IJC review process. This discourages cooperation and collaboration between Michigan and the EPA which should occur when the RAPs are still in draft stage.

EPA's current involvement in the RAPs has not improved. Neither EPA Region V nor GLNPO is involved in the preparation of Michigan's five remaining RAPs. Until mid-1988, GLNPO was represented on the "RAP Teams" (agency committee responsible for writing the RAP) for the St. Marys, St. Clair and Detroit Rivers. Despite repeated requests for their participation and despite the essential nature of EPA's participation to successfully complete these RAPs, GLNPO has not participated.

Section 118(c)(3) of the federal Water Quality Act of 1987 mandates the U.S. EPA, through its Great Lakes National Program Office (GLNPO), to carry out a five-year Study and Demonstration Program for the control and remediation of toxic pollutants in the Great Lakes. Emphasis is on the removal of toxic pollutants from bottom sediments. In selecting locations for the demonstration projects, GLNPO was directed, in the Water Quality Act, to give priority consideration to five Areas of Concern, including Saginaw Bay in Michigan.

In May 1987, DNR sent a letter to the Director of the GLNPO expressing our interest in and requesting additional information on the Section 118(c)(3) Demonstration Program. Additional, verbal requests for information followed. In November 1988, DNR received correspondence announcing that the program was in the initial stages, and that a management structure to complement the program had been established. DNR is represented on the Management Committee which, to date, has met only once in December 1988. The Management Committee is charged with upper-level organizational decisions to ensure that decisions and recommendations are the consensus of participating agencies.

A tentative schedule for the five-year study was included in the correspondence received in November 1988. Site selection for the demonstration projects was scheduled for fiscal year 1990. We believe it is essential for the EPA to move forward more rapidly with those project areas identified by Congress.

Consultation with the Management Committee would be productive in this process.

Contaminated Sediments. Annex 14 of the GLWQA requires that the Parties, in cooperation with the states and provincial governments, develop a standard approach and agreed procedures for the management of contaminated sediments by December 31, 1988. DNR received a draft plan for review and comments in January 1989. Additional drafts, or further information regarding this plan have not been received.

Annex 14 also requires an evaluation of existing technologies for the management of contaminated sediments by December 31, 1988, design of a demonstration program and implementation schedule by June 30, 1988, and a progress report on the implementation of the Annex 14 requirements by December 31, 1988. Progress on these requirements is unknown.

Uniform water quality standards. This is perhaps the most critical area in terms of the need for leadership by the EPA. Charles Sutfin, head of EPA's Region V Water Division, has written a concept paper which he presented to the Great Lakes Environmental Administrators (state officials working together on the 1986 Great Lakes Toxic Substances Control Agreement). He proposed development of a Great Lakes basinwide package with heavy state involvement through an oversight management committee as well as a technical committee. The package includes: Great Lakes water quality criteria (a needed and welcome federal step), antidegradation standards (in place in Michigan since 1986), and procedures to turn standards into permit requirements (in place according to current Michigan water quality standards since 1985). The EPA hopes this effort will increase compatibility among the states, address the specific needs in the Agreement, and begin addressing Great Lakes ecosystem needs. The focus on developing Great Lakes criteria is exciting because in some instances national criteria may be inappropriate for our basin. For example, national standards for human health-based criteria for fish consumption may be inappropriate for the Great Lakes ecosystem.

Little progress has been made towards developing the three lists of critical pollutants required by Annex 2 or toward developing and revising the specific objectives. The first joint meeting between U.S. and Canadian committees addressing these issues took place earlier this month.

Summary

While the levels of most persistent toxic substances in the Great Lakes ecosystem have decreased dramatically, more needs to be done. We need to reduce loadings from all sources in order to reduce concentrations in the ecosystem. We must work to identify, quantify, and control all sources of persistent toxic substances. We must prevent the release of toxic substances when possible through source reduction and outright bans, regulate toxic substances at their sources when we cannot prevent their release, and have clean-up programs to remove the contaminants and mitigate the damages when possible.

U.S. EPA leadership is vitally needed. We need fully funded and fully implemented Great Lakes water quality programs and policies. The EPA must fund these programs, especially the Great Lakes National Program Office which is charged with Great Lakes responsibilities. The new Clean Water Act recognizes the Great Lakes as a critical national resource, and has a strong Great Lakes component including a Research Office that needs to be fully funded. We look to the EPA to provide leadership and cooperation to assist the states in defining and developing Lakewide Management Plans. We need the EPA's full participation and financial commitment to the development and implementation of Remedial Action Plans. We need a coordinated federal role in developing sediment management strategies--a critical Great Lakes contamination problem. We need uniform regulatory standards applicable to the Great Lakes ecosystem.

Strong, coordinated, constructive federal measures are essential ingredients if we are to implement the goals and objectives of the Water Quality Agreement and improve the water quality of the Great Lakes.

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STATEMENT OF MARK VAN PUTTEN, DIRECTOR
GREAT LAKES NATURAL RESOURCE CENTER
NATIONAL WILDLIFE FEDERATION

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENTAL MANAGEMENT
COMMITTEE ON GOVERNMENTAL AFFAIRS
U.S. SENATE

April 28, 1989

Introduction

Chairman Levin and members of the Subcommittee, thank you for this opportunity to testify on behalf of the National Wildlife Federation ("NWF") on EPA's efforts to implement the Great Lakes Water Quality Agreement and to protect and restore Great Lakes water quality. I am an attorney on the staff of NWF and Director of NWF's Great Lakes Natural Resource Center, located in Ann Arbor, Michigan. NWF is the largest, non-governmental, not-for-profit conservation organization in the U.S., with over 5.5 million members, supporters and contributors.

Since 1982, NWF's professional staff in its Great Lakes office have worked with our affiliates in the Great Lakes states to address the severe problem of toxic pollution of the Great Lakes ecosystem. Today, you have invited me to address three issues in this regard: (1) the status of the Lakes and EPA's record in implementing the Great Lakes Water Quality

Agreement, including the 1987 amendments; (2) EPA's development and implementation of the Lake Michigan Toxic Pollutant Control/Reduction Strategy and the Lakewide Management Plan for Lake Michigan; and (3) EPA's record in encouraging uniform water quality standards among the Great Lakes states. I will address each of these issues in turn.

Major Great Lakes Water Quality Problems

As you know, the Great Lakes are the nation's greatest freshwater resource. They contain over 90% of the surface freshwater in North America and provide drinking water to tens of millions of Americans and Canadians. The economic benefits of the Lakes to the region are also considerable. For example, the Great Lakes recreational sport fishery has been estimated to be worth over $4 billion per year. Unfortunately, we have not been good stewards of this magnificent natural and economic resource.

Without question, the major water quality problem in the Great Lakes today is the contamination of the ecosystem with toxic substances. For example, the Canadian-American International Joint Commission has concluded that the problem is severe and that we are not doing enough to address it:

> Toxic chemicals, however, are another matter. Despite the positive signs of recovery from the severe stresses of substances such as DDT, little overall progress has occurred in dealing with the generic problem using technological means. The problem is more severe and complicated than real-

> ized when the 1978 [Great Lakes Water Quality] Agreement was signed. More and more chemicals are being produced and identified in the ecosystem, particularly polychlorinated organics which persist and bioaccumulate in the food chain. Regulations to control specific substances based on proven effects cannot keep up with the expanding scope of the problem. The sources are more elusive to identify and document; the effects more scattered and invisible.

International Joint Commission, Third Biennial Report 2 (Dec. 1986).

These findings have been confirmed by the U.S. National Research Council and the Canadian Royal Academy of Sciences. In a joint report assessing implementation of the GLWQA, these two organizations found "substantial evidence that the human population living in the Great Lakes basin is exposed to, and accumulates, appreciably more toxic chemical burden than people living in similarly large regions of North American for which data are available." The Great Lakes Water Quality Agreement: An Evolving Instrument for Ecosystem Management 58 (1985). The committee also concluded that "the current programs for controlling persistent toxic substances in the Great Lakes Ecosystem are inadequate," and that "the lack of effective control measures seems likely to affect many generations to come." Id. at 8.

Of particular concern to NWF, since many of our members are avid sport anglers and hunters, is contamination of Great Lakes sport fish and waterfowl and the threat it poses to human health. Researchers have discovered that even low levels of certain toxicants in the Lakes can result in significant contamination of the fish and waterfowl that inhabit them. As a result of this phenomenon, known as "bioaccumulation," the most significant route of human exposure to environmental, toxic contaminants in the Great Lakes region is the consumption of contaminated food products, especially fish. National Research Council and Royal Society of Canada, The Great Lakes Water Quality Agreement 56 (1985).

Dr. John Black of Roswell Park Memorial Institute in Buffalo, New York, illustrated the significance of bioaccumulation in his September 21, 1983, testimony before a House of Representatives Subcommittee.

> An extreme example [of bioaccumulation] is the case of the Great Lakes. The relative importance of the fish versus drinking water in this situation can be a little better appreciated if one considers that given a fish contaminated with PCB at 5 ppm, a human would have to drink Great Lakes water for about 1000 years in order to equal the amount of PCB that you get in a single one pound serving of these contaminated fish.

While there is a clear consensus that toxic pollution of the Great Lakes poses an immediate and long-term public health threat, there is less agreement on the specific pollutants and sources that pose the greatest risk. The Great Lakes Water Quality Board has developed a list of 362 toxic chemicals that have been positively identified in the Great Lakes ecosystem. Yet, neither EPA nor any other federal agency has developed a methodology to evaluate the relative impacts of these chemicals on public health. And, in the meantime, EPA has so far rejected the environmentalists' call for a "toxics freeze" prohibiting any increased dumping of these poisons into the Lakes pending a determination of their danger.

Before proceeding, it is important to note that certain wildlife species in the Great Lakes basin are themselves being severely harmed by toxic pollution. In fact, wildlife are at great risk since they eat more contaminated Great Lakes fish. For example, mink, river otter, cormorants, eagles & osprey all rely heavily on a diet of Great Lakes fish and are showing the effects from this contaminated food source. Research indicates that eagles nesting near the shores of the Great Lakes are far less successful in reproducing than are those nesting near inland waters. Similar results have been observed for mink populations. Also, hideous birth defects are showing up in fish-eating cormorants from Green Bay and Saginaw Bay.

The Clean Water Act recognizes the impacts of pollution on wildlife and directs EPA to develop water quality criteria "accurately reflecting the latest scientific knowledge on the kind and extent of all identifiable effects [of toxic pollutants] on health and welfare including ... wildlife." 33 U.S.C. § 1314(a)(1). Despite this charge and despite the observed impacts of toxics on Great Lakes wildlife, EPA has not developed criteria or guidance that account for the impact of consuming contaminated fish (or other food sources) on terrestrial wildlife.

In a moment, I will elaborate on EPA's failure to demonstrate leadership in addressing this and other Great Lakes problems. But first, I would like briefly to summarize the sources of these toxic chemicals contaminating the Great Lakes ecosystem.

Sources of Toxicants Contaminating the Great Lakes

The sources of the toxics poisoning the Great Lakes can conveniently be divided into five categories: (1) municipal and industrial wastewater and stormwater discharges; (2) urban and rural runoff; (3) atmospheric deposition; (4) groundwater contamination; and (5) contaminated river and harbor sediments ("in-place" pollutants). The relative significance of these sources varies with different areas of the Lakes and with specific toxic pollutants.

Historically, EPA and the states have focussed on the first category, the "point sources" of pollution. These sources are the easiest to control, in large part because the Clean Water Act subjects all of them to a permitting requirement. But even with respect to these sources, EPA has not developed a mechanism to estimate their total contribution of specific toxics to each Great Lake and EPA has not developed specific target reductions in these loads.

The other source categories are, in some instances, more significant, but they are more problematic as well. For example, the PCB problems in Waukegan Harbor, Illinois; Green Bay, Wisconsin; and the Kalamazoo River, in Michigan, are the result of contaminated sediments from past industrial pollution. The PCBs attached to those river and harbor sediments are slowly being released into the water column and into the food chain where they contaminate the fish, birds and the people that eat them.

More recently, researchers have discovered that significant amounts of airborne PCBs, DDT, dieldrin and other toxics are being deposited in the Lakes; their great surface areas and long retention times make them particularly sensitive to this "toxic rain." More than half of the PCBs currently reaching Lake Michigan are estimated to arrive through the air; for Lake Superior, it's estimated to be over 90%.

NWF recently obtained from EPA the data on toxic air emissions reported under the federal community "right-to-know" law. We have analyzed these data state-by-state and pollutant-by-pollutant in our report, Danger Downwind. Attached to my testimony is a table from this report that highlights the amounts of toxic chemicals being emitted into the air in the eight Great Lakes states. By our estimate, approximately half of the toxic chemicals subject to this federal reporting requirement are also on the Great Lakes Water Quality Board's list of chemicals of concern for the Lakes (copy attached). These data should be used immediately by EPA to identify the likely major atmospheric sources of Great Lakes toxics and to develop appropriate regulatory controls.

This short tour of Great Lakes pollution sources does not comprehensively describe the scope of the problem or the challenge of finding solutions. It does indicate that what is needed is a holistic, or ecosystem-based approach to determine the necessary reductions in toxic loads from all sources and to require that they be achieved according to an ambitious timetable. This approach is grounded in the philosophy of the GLWQA and is the essence of the environmentalists' "toxics freeze" proposal. EPA's failure to integrate this approach into existing regulatory programs indicates the degree to which the Agreement is ignored and suggests the need for a radical revision in the way EPA addresses this problem.

Implementation of the Great Lakes Water Quality Agreement

The National Wildlife Federation has made the implementation of the Great Lakes Water Quality Agreement one of the highest priorities for our Great Lakes office. For example, I represented NWF as one of three non-governmental members of the official U.S. delegation that negotiated with Canada the 1987 Protocol amending the Agreement. This Agreement is, on paper, a model of international cooperation to solve shared environmental problems.

The GLWQA has proved to be remarkably prescient in identifying the problem of toxic substances pollution of the Lakes and in articulating fundamental principles to be applied in developing solutions. For example, the Agreement commits the U.S. and Canada to "eliminate to the maximum extent practicable the discharge of pollutants into the Great Lakes System." Similarly, it calls for the "virtual elimination" of the discharges of persistent toxic substances into the Lakes and provides that "[t]he philosophy adopted for control of inputs of persistent toxics substances shall be zero discharge." These principles reflect the particular sensitivity of the Lakes to the effects of toxic pollution and a recognition that stricter pollution controls are necessary here than may be required elsewhere.

Unfortunately, the federal government and the Great Lakes states have, in general, a poor record of implementing these principles and the other important provisions of the Agreement. The International Joint Commission continually notes the lack of progress by the U.S. and Canada in complying with the Agreement. Meanwhile, the U.S. government quibbles about its legal effect; the Great Lakes states deny any responsibility for applying it in their pollution control programs; and the toxic pollution of the Lakes continues.

First, let me focus on the federal government, particularly EPA. EPA, OMB, the State Department and other federal agencies have historically treated the Agreement as hortatory in nature. Even those Agreement provisions requiring specific control programs are viewed as mere goals with no binding legal effect. To our great disappointment, EPA apparently continues to denigrate the Agreement's legal significance to this day, notwithstanding the 1987 amendments to the U.S. Clean Water Act. Those amendments included a new Great Lakes section in the Act, section 118, which specifically states Congress' desire that the Agreement be implemented and charges EPA with that task.

While EPA gives the Agreement lip service, it has not been integrated into EPA's regulatory programs. Later in my testimony I will address this issue further in the context of state water quality standards. But it is important to understand that this example is not unusual, that EPA's slighting of the Agreement is pervasive.

EPA recently proposed regulations to implement the new "toxic hot spots" provision added by the 1987 Clean Water Act Amendments (§ 304(l)). The purpose of this section is to require that EPA and the states identify those areas of the nation's waters that are particularly threatened by toxic pollution. Then, § 304(l) requires that EPA and the states develop and implement comprehensive pollution control strategies to clean up these hot spots so that they meet all water quality standards.

To our amazement and chagrin, EPA's proposed § 304(l) regulations completely ignore the fact that 30 areas of the U.S. portion of the Great Lakes have already been designated as "toxic hot spots" by the IJC. (Attached to my testimony is a copy of NWF's comments on these proposed regulations in which we elucidate these and other failings.) Furthermore, EPA didn't even propose to incorporate the work already underway to develop remedial action plans for these hot spots into its requirements under § 304(l) for developing "individual control strategies." While we are not privy to the agency's inner workings, we cannot ascertain that the Great Lakes Program Office participated in or influenced the development of these regulations. If it did, the tracks are well-covered.

We have found the Great Lakes and the GLWQA to be similarly slighted in EPA's recently-proposed regulations for controlling stormwater pollution discharges, EPA's recently-proposed pollution prevention policy, and in EPA's draft framework for the Water Quality Standards Program. Let me elaborate a moment on the latter document because its development illustrates so well how little the Great Lakes really matter to EPA.

This draft "framework" (a copy of which I have attached to my testimony) purports to articulate EPA's water quality protection agenda into the next century and was recently the subject of a major EPA conference in Dallas. This conference, according to its organizers, was the first national meeting ever held on EPA's water quality protection agenda. It was attended by representatives of EPA headquarters and regions, other federal agencies, over thirty states, polluters, and environmental groups. Yet, no one from EPA's Great Lakes National Program Office was there. GLNPO's absence from this meeting is indicative of its meager influence on national EPA policy.

Time and time again we see the Great Lakes ignored in the development of EPA regulations, guidance and water quality criteria. To the extent we can learn of EPA's inner workings in setting water quality protection policy, we find that no one is effectively speaking up for the Lakes. One has to wonder how much credibility EPA will have representing the U.S. in seeking international agreements on global environmental problems when it has cared so little about implementing this "model" international agreement. NWF's concern in this regard was recently expressed in a letter sent by NWF President Jay D. Hair to EPA Administrator William Reilly (copy attached). We await EPA's reply.

Our experience with the Great Lakes states is no more encouraging. Generally, the states abjure any responsibility for implementing the Agreement. Their position is that they are not formal parties and that it's up to the federal government to implement the Agreement. Certainly, none of the Great Lakes states has explicitly incorporated the Agreement's provisions into its water pollution control programs. We are, however, hopeful that this may change.

For example, in his State of the State message this year, Michigan Governor James Blanchard promised to order state agencies to consider the Agreement in developing regulations:

> I will: Sign an Executive Order requiring all state agencies to consider the impact of their actions on the Great Lakes, and to require that, where appropriate, rules developed by state agen-

> cies be accompanied by an analysis of their effect in meeting the goals and objectives of the U.S.-Canada Great Lakes Water Quality Agreement....

Building the Future: The Michigan Strategy 54 (Feb. 1989). We are eagerly awaiting the issuance of this order by Governor Blanchard. If, as promised, it requires that Michigan integrate the Agreement into its environmental program, it will be an important development.

In summary, neither the federal government nor the states have made real the rhetoric of the Agreement. Until it becomes part of the existing regulatory scheme, in the final analysis the Agreement simply will not matter.

Protection of Lake Michigan from Toxic Pollution

The second topic that I was asked to address in my testimony today is EPA's "Lake Michigan Toxic Pollutant Control/Reduction Strategy" (the "Strategy') and the planned "Lake Michigan Comprehensive Plan." The Plan is required by Annex 2 of the Agreement and is supposed to clean up Lake Michigan by reducing the amount of the most dangerous toxics dumped into Lake Michigan from all sources. The Strategy was an attempt by EPA in November, 1986, to do something similar.

In our view, the Strategy was and is inadequate. It does not incorporate the holistic, ecosystem-based approach I described earlier. It ignores the existing contamination of Lake Michigan fish and waterfowl, and it fails to set mandatory reduction levels for all sources of the key toxic pollutants. Therefore, NWF has sued EPA in federal court claiming that EPA has failed to fulfill its Clean Water Act responsibility to require immediate controls on the amounts of the most dangerous toxics dumped into Lake Michigan.

The key point here is that most Clean Water Act controls (other than the technology-based effluent limitation guidelines) are based on avoiding harm immediately downstream from a particular source. But the Great Lakes receive toxic pollution from many tributaries and thousands of sources. In situations like this, the Clean Water Act requires controls on the total amount of a pollutant contaminating a lake or river from all sources (referred to in § 303(d) as "total maximum daily loads").

NWF believes that such controls are required on the total loads of the most dangerous toxics currently dumped into Lake Michigan. We rely in part on the fact that public health agencies warn Lake Michigan sport anglers that, because of toxic pollution, it is unsafe to eat their catch. Given this, Lake Michigan does not meet the Clean Water Act's "fishable-swimmable" goal, triggering the requirement for developing total maximum daily loads.

NWF believes that EPA should develop these controls considering the cumulative impact of all sources of persistent toxic pollutants on Lake Michigan, the fish that inhabit the Lake, and the people and wildlife that drink this water and eat these fish.

EPA must also consider the cumulative effects on people and wildlife of eating fish that are contaminated with many different toxic chemicals. Currently, EPA and FDA evaluate the health impacts of eating these fish by assuming that they are contaminated with only one toxic of concern. This is simply untrue for Lake Michigan sport fish. The Strategy does not provide for the controls I've outlined and, thus, our pending lawsuit.

Even evaluated on its own terms, the Strategy has failed due largely to inadequate EPA oversight. For example, the Strategy specifically identifies PCBs as one of the "pollutants of concern" and specifically requires the development of permit limits on point sources of PCBs by the end of fiscal year 1989. Strategy at 6. However, in January of this year, the Wisconsin Department of Natural Resources proposed to issue a new discharge permit to one of the largest point source dischargers of PCBs into Lake Michigan, the Fort Howard Paper Company, without including water quality-based limits on PCBs. NWF formally objected to this permit and, we understand, its issuance has been deferred.

Similarly, the Michigan DNR recently issued a draft remedial action plan for the Kalamazoo River. According to DNR estimates, this River alone contributes over 10% of the current PCB loadings into Lake Michigan. As I mentioned a moment ago, the Strategy identifies PCBs as one of the most dangerous toxics for the Lake. It also requires that the Strategy be implemented, in part, through the development of remedial action plans. Yet, MDNR failed even to mention the Strategy in its draft RAP for the Kalamazoo River, much less consider whether this RAP would contribute to its implementation.

Why is this so? Because this Strategy and the Agreement's requirement for remedial action plans are not integrated with state and federal regulatory programs. Because, to our knowledge, EPA has not effectively enforced it. In truth, the Lake Michigan Strategy and the GLWQA are window dressing and the public is misled by these fine words into thinking that real progress, i.e. fewer toxics reaching the Great Lakes, is being made. Until the provisions of the Agreement, the Strategy, and RAPs are given the force of law and integrated into regulatory programs, they will be nothing more. Thus, you can understand why we are skeptical that a new plan -- the Lake Michigan Management Plan -- will be any different.

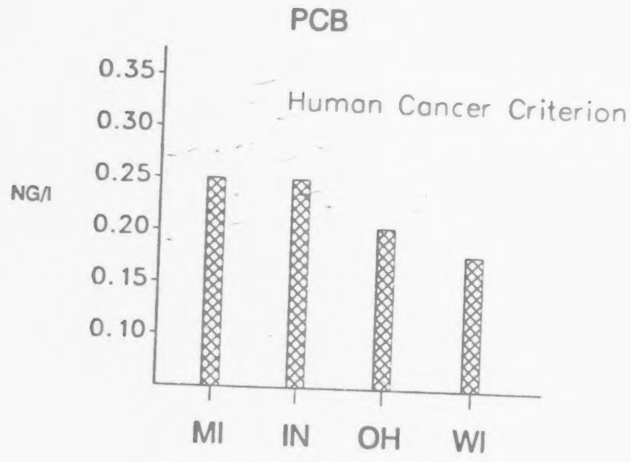
Developing Uniform Water Quality Standards for the Great Lakes

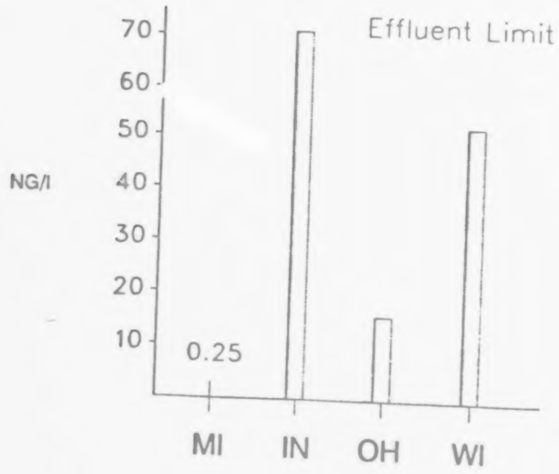
Finally, I have been asked to assess EPA's record in requiring the development of uniform water quality standards to protect the Great Lakes. In this regard, EPA's past record is poor, but I am happy to report that there is some reason to hope that this may change.

As you know, water quality standards are set in the first instance by states. However, EPA is required to review those standards and any revisions to ensure that they comply with federal requirements and that interstate and international waters are adequately protected. In this regard, EPA has issued certain national guidelines and requirements specifying the minimum requirements for state water quality standards. Because of the unique sensitivity of the Great Lakes to toxic pollution, these national requirements are inadequate in several critical respects. However, EPA has never developed any specific Great Lakes requirements to address these inadequacies.

As a result, EPA currently allows the Great Lakes states to adopt water quality standards that exacerbate our existing pollution problems. The best example is the current practice of applying standards in a way that allows the use of dilution as a substitute for pollution treatment. The national EPA guidelines assume, in effect, that pollutants are rapidly transported downstream and diluted to "safe" concentrations. The difficulty is that for practical purposes the upper Great Lakes are a "closed" system. Pollutants that are diluted to "safe" concentrations just downstream of a source are ultimately deposited in the Lake where they remain for generations. What matters to the Great Lakes is controlling the total amounts, not concentrations, of persistent toxic pollutants from all sources.

Despite wide acceptance of this principle, the Great Lakes states continue to allow polluters to dilute their discharges of persistent toxic pollutants. The amount of dilution allowed varies widely as the following figure illustrates. It shows that while Michigan, Indiana, Ohio and Wisconsin have very similar ambient criteria for PCBs, the resulting permit limits vary greatly due to the amount of dilution allowed.





To date, EPA has done little, if anything, to develop uniform guidance on the extent to which (if at all) dilution can be substituted for the treatment of Great Lakes toxic pollutants. For example, Wisconsin recently submitted to EPA for review new water quality standards, permit rules, and an antidegradation rule. While the standards themselves are roughly equivalent to those found in Michigan, the manner in which they are to be applied allows dilution to substitute for treatment. The end result is more mass loads of persistent toxics into the Great Lakes.

NWF and other environmental groups believe this violates the Agreement's requirement of "virtual elimination" of persistent toxic pollutants. Therefore, we have petitioned EPA requesting that EPA reject Wisconsin's standards for violating the Agreement by allowing dilution. This petition is currently pending and I have attached a copy to my testimony. EPA's response to our petition will test the Agency's commitment to using the Agreement as a supplement to existing national guidelines. The approach we have advocated would tailor the EPA's national requirements to fit the environmental realities of the Great Lakes.

Similarly, the environmental groups have called for an immediate "toxics freeze" to prohibit _any_ net increase in the amount of those toxics on the Great Lakes Water Quality Board list into the Great Lakes. This freeze could be implemented by EPA and the states under the current antidegradation requirements, but so far it has been rejected.

EPA has recently suggested that the national guidelines and criteria may need to be formally modified to fit the Great Lakes. As we understand this proposal, EPA would develop a Great Lakes "amendment" to its existing regulations, guidelines and criteria. It would include specific, additional requirements for water quality standards in the Great Lakes in order to implement the Agreement and protect the Lakes.

On a conceptual level, this proposal appears to have merit. However, to succeed these new regulations, guidelines and criteria must be adopted quickly, they must be adopted with the active involvement of the public and, at a minimum, they must specifically address the following issues:

(1) Great Lakes water quality criteria for toxic pollutants listed pursuant to Clean Water Act § 307(a);

(2) Great Lakes water quality criteria for additional pollutants;

(3) applying water quality criteria in developing controls on pollution sources, e.g. consideration of exposures from other pollutant sources;

(4) acceptable risk levels;

(5) assumed fish consumption rates;

(6) mixing zones and zones of initial dilution;

(7) evaluation of background pollutant levels, e.g. relevance of analytical limits of detection;

(8) polluted sediments;

(9) approaches to calculating effluent limitations in permits, e.g. allowable dilution and relevance of analytical limits of detection;

(10) antidegradation policy and procedures;

(11) interpretation of narrative standards;

(12) biomonitoring requirements and use of biocriteria;

(13) control, reduction and virtual elimination of mass loads of persistent and/or bioaccumulative pollutants into the Great Lakes ecosystem; and

(14) public involvement in the implementation of the GLWQA.

We are eager to work with EPA and the states to develop specific Great Lakes requirements on all of these issues. It would provide all of the Great Lakes states with clear, advance warning of the meaning of the Agreement for their water quality standards program. But if it's going to happen, it must occur soon.

Conclusion

Mr. Chairman and members of the Subcommittee, we don't mean to say today that all the answers to the problem of toxic pollution of the Great Lakes are clear, that all the solutions are apparent. But it is clear that the conventional, pollutant-by-pollutant, dilution solution to pollution isn't working. While we hear much rhetoric about the importance of the Agreement and the wisdom of its "ecosystem approach" to Great Lakes management, we see little reflection of this rhetoric in EPA's regulatory and remedial programs.

If we are to begin the job of protecting and restoring these magnificent Sweetwater Seas, we must act now using the best data currently available. EPA and the states should immediately adopt a toxics freeze to prevent increased loadings of the most dangerous pollutants. Then, EPA must develop phased reductions in these loads according to an ambitious timetable. The path is charted clearly enough to begin. The real question is whether our government has the commitment to the Agreement and the political will to take a few steps down it.

Thank you for this opportunity to present our views. I'd be happy to answer any questions.

WMEAC

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Inland Lakes and Streams Act 1972

Sand Dune Protection and Management Act 1976

Michigan Bottle Bill 1976

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Wetland Protection Act 1979

Michigan Used Motor Oil Recycling Program 1979

Hazardous Waste Management Act 1979

Pigeon River Country State Forest Oil Drilling Protections 1980

Surface and Underground Mine Reclamation Act 1980

Great Lakes Oil Drilling Ban 1982

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Comments before the U.S. Senate Subcommittee on Oversight of Government Management

"Actions Taken by the EPA to Implement the Grant Lakes Water Quality Agreement of 1978"

Presented by: Shari Schaftlein, Water Quality Scientist
Hearing Site: Grand Rapids, MI
Date: April 28, 1989

Hello, my name is Shari Schaftlein, I am the staff Water Quality Scientist for the West Michigan Environmental Action Council (WMEAC), a citizen membership organization, located in Grand Rapids, (and I will use a phrase borrowed from a local rock radio station), the city where sewage can be seen floating on the River 24 hours a day, thanks to the nifty new bridge lights."

Senator Levin, I'd like to give you this bumper sticker as a souvenir of your Grand Rapids visit. You may want to hold it up for the audience to see. I give you this not to be disrespectful but to impress upon you how mainstream the issue has become in this area.

The combined sewer overflow (CSO) problem is the most widely recognized surface water quality issue in west Michigan and provides a reference point in discussing other surface water quality issues, which I will continue doing in a moment.

First I would like to share with you the point of view from which my comments are derived. WMEAC's professional staff of four tries to track a wide variety of environmental issues on the state, regional, national, and international level. Our staff has taken part in Great Lakes Week in Washington, and numerous basinwide conferences for environmental groups. Our staff and volunteers determine what local actions can be taken to promote environmental protection.

The majority of our efforts involve hands-on, grass roots, environmental education and advocacy. A few of the issues we work on include: community right-to-know, development of alternatives to dangerous pesticides, watchdogging wastewater discharge permits, expanding recycling systems, promoting tree planting ordinances, operating the only privately funded statewide used oil recycling program in the United States, and lobbying for sand dune protection.

We take advantage of all opportunities to tie a local issue into the "big picture", that is, cross-media management, watershed and basinwide management, and spaceship earth concepts. I'm sorry to report that we do most of our work without mentioning or being influenced by anything that the EPA Region V Office or the Great Lakes National Program Office (GLNPO) is doing. The visibility that EPA has with the public in West Michigan is very low.

This lack of visibility is due to either lack of substantive work or a public relations problem. In my opinion EPA has described a vision of what we may, or could do, to maintain and enhance the Great Lakes but has no followed through with enough action steps. They have played the role of the shy cheerleader. When I need to brush up on my ecosystem management concepts I read the Great Lakes Water Quality Agreement (GLWQA) and the Five Year Program Strategy for GLNPO, then I review the citizen guides on Great Lakes advocacy that groups such as Great Lakes United, Lake Michigan Federation, Sierra Club, and National Wildlife Federation have prepared. The guides contain the substantive action steps needed to accomplish the vision EPA has come up with.

What I have not seen is a progress report from Region V that has the following information:

1. Here is what we are supposed to do.
2. Here is what we did.
3. Here are the impediments to basin management
4. Here is what we are doing to remove the impediments.

This is the type of information that would be useful to activists on the local level.

If there is a public relations problem and EPA claims they are doing plenty of substantive work, then we must clarify what substantive work is. I need to know whether the regional staff is taking action on a daily basis to reduce permitted discharges to the air and water in the Basin.

The "bean counting" reports that occasionally make the Associated Press wire tell us that x-number of wastewater permits were issued and that x% is in compliance. At the same time the headlines say "600 Miles of Stream Fouled, DNR (Michigan Department of Natural Resources". A small amount given the total number of streams in Michigan, but most these 600 river miles flow through the major population centers.

I cannot imagine that the Great Lakes are being adequately protected if in 1986 MDNR had 10,000 air permits backlogged, and a 13 year backlog in groundwater permits. Furthermore, we see EPA being very shy in it's role of insuring that Great Lakes states are doing an adequate job of implementing federal acts like FIFRA and RCRA. Our state is struggling to address the incinerator ash issue and EPA has been silent.

I'm sure EPA considers its statistical summaries of ambient Great Lakes data and break throughs in ecosystem modeling as substantive work, but for my Great Lakes advocacy efforts, EPA needs to package this data into a form that will stir some emotion and support for EPA programs.

EPA's visibility is likely to increase if progress is made on the Lake Michigan Lakewide Management Plan.

I would like to move now into some specific matters including the perceived health of Lake Michigan, the Remedial Action Plans for White Lake, Muskegon Lake, and the Kalamazoo River, and uniform water quality standards amongst Great Lakes states.

To a certain extent the CSO problem has been a blessing in disguise. There is now wide spread recognition that the sewage overflows flow downstream to Grand Haven and out into Lake Michigan. It has further dawned on the community that we drink Lake Michigan water and the near shore currents can spread the river water along the beaches that we recreate on. People have a clear mental image of a dirty river flowing to the big Lake. When you multiply what is flowing out of our River with that of the other major rivers along the Lake and combine the input of air toxics falling out on the Lake, one can begin to understand that Lake Michigan is accumulating pollution. The results of this pollution -- fish reproduction problems, reproduction problems in birds and mammals which consume Great Lakes fish, and human fish consumption advisories -- now make sense. Without getting into specific chemicals and specific sites, the apparent trend in the reports that come across my desk is, the more we look the more we find.

During the CSO debate last year the EPA's name came up frequently. The DNR claimed they had no direction from EPA to address CSOs, the DNR focus was on daily discharges from municipal treatment plants. The City claimed that federal funding has not been available to retrofit the combined sewer system. The CSO issues is the benchmark for comparison now. It is tough for west Michigan to take a lead role in supporting the GLWQA when we haven't cleaned up obvious pollution sources in our own backyard. The EPA's visibility on this issue has been nil. There are only a few references to CSOs in the Agreement and in GLNPO's Five-Year Program Strategy.

The current strategy suggests that in FY 1989 GLNPO will assess combined sewer overflows and work with the EPA water program to initiate appropriate regulatory actions. I hope this effort occurs in a timely manner and the results are shared with communities such as ours that are in the midst of preparing a long term control strategy. for CSOs.

Of concern in the GLWQA is the Phosphorus loading to Lake Michigan from CSOs and persistent toxic substances which are being discharged during CSO events as well. Since Grand Rapids is the first city in Michigan to develop a long-term control strategy under the DNR's new found commitment to address CSO discharges. I expect that GLNPO staff will seriously evaluate whether Michigan's regulatory approach meets the GLWQA objectives.

Regarding the Areas of Concern (AOCs). If White Lake, Muskegon Lake, and the Kalamazoo River are AOCs, and the Grand River has CSO problems, you can bet that the west Michigan tourism industry is banking on the fact that we get clean dilution water from somewhere to offset the pollution problem.

I attended and provided oral and written comments on each of these AOCs during the summer and fall of 1987. Comments were provided on first and second drafts of the Remedial Action Plans (RAPs). Since that time I have had no contact with the EPA or DNR on the status of the RAPs. There have been no public meetings or notices. I don't know if my comments were included in the final drafts. I have received no feedback from any interested citizens who have seen the final RAPs.

I'll share a few of my comments that I prepared for the Muskegon RAP to exemplify some of my concerns with RAPs. The executive summary of the second draft pointed out that Muskegon Lake has no adverse impact on Lake Michigan, it goes on to point out four localized problem areas and recommendations for fish testing data to be used to update the fish consumption advisory. The last line states, "Remedial actions will be developed and prioritized based on the outcome of these investigation and further public review." I suggested that the DNR provide RAP updates to keep the community informed of progress.

I also had strongly suggested some form of a matrix be developed so that citizens can track progress, assign responsibility, and thus hold governments and watershed communities accountable. Along the horizontal axis could be listed the pollution sources: air toxics, permitted facilities, nonpoint sources, groundwater contamination, contaminated sediment, and hazardous waste management. The vertical column could list local, state, and federal contacts, laws and regulations, new or proposed initiatives, funding, and enforcement activities. Periodically the DNR and EPA could walk through the matrix with interested parties to track progress.

The AOC reports are huge and packed with data and recommendations. The ones I reviewed were short on realistic action steps, funding options, time frames for clean up, and local government actions that could be taken. The tone of the Muskegon Lake RAP to a large extent suggests that citizens and local governments can sit back and let EPA and the DNR handle things.

The AOCs in west Michigan are in a small towns, or spread along a river system. It is unusual for citizens in these situations to develop a sophisticated support system for a RAP. If you want the RAP process to be accelerated than you need to provide some financial support for citizen groups. At a few sites across the basin EPA is supporting citizen groups -- at these sites progress is being made in implementing the RAPs. It doesn't appear that White and Muskegon Lakes are getting any special attention by virtue of being an AOC. Yet the community perception is, if we are an AOC, someone must be taking care of us. If internally EPA has ranked the AOCs in terms of impacts and importance then you need to let the AOC communities know so that their expectations can be adjusted.

Regarding uniform water quality standards, we have been participating in DNR's triennial review of Michigan's water quality standards. Two key issues in this review are the toxics standards and mixing zones for discharges to the Great Lakes. In order to reduce the loadings of persistent toxic chemicals as required in the GLWQA, it only makes sense that each state have uniform water quality standards.

I expect the EPA to provide a review of the similarities and differences between discharge standards in each of the Great Lakes states, and be vocal about the results. If the Governors are willing to sign off on a Toxic Substance Control Agreement, work together on a Great Lakes Protection Fund, and agree to uniform fish advisories, then there must be agreement to uniformly adopt the most restrictive standard for dischargers in the Great Lakes Basin, as determined by the current scientific literature.

WMEAC's support for the revised standards will be contingent on this point. If we are preaching ecosystem management we must demonstrate it. The DNR and EPA depend on the environmental groups to support the water quality standards revisions. The standards are finalized by consensus of DNR, EPA, and interest groups, in a somewhat scientific, a-political atmosphere. The DNR then looks to environmental groups to help publicize the new standards in order to get statewide support and ensure passage of the standards by the State Legislature's Joint Committee on Administrative Rules, a non-scientific, totally political body. I would like to use as an adovocay tool a quote from the EPA that says something like, "These revised water quality standards represent state-of-the-art control for persistent toxic substances in the Great Lakes and move us much closer to our goals as identified in the Great Lakes Water Quality Agreement". I hope to have enough assurances to say, "With the adoption of these standards, fish advisories will be lifted in your lifetime, and reproductive failures for Great Lakes fish eating birds and mammals will be significantly reduced." These indicators will suggest that humans are better off as well.

Senator Levin, the responsibilities the EPA has are enormous. As a result of the amendments to the GLWQA, the length of GLNPO's Five-Year strategy has doubled -- their funding has not. Support is needed from the EPA in Washington and the Office of Management and Budget. EPA needs the funding and the authority to do what is required of them under the GLWQA. Through your position on the Committee on Governmental Affairs it is possible for you to ask Congress to examine how much money it would take to meet the objectives in the Great Lakes Water Quality Agreement.

If adequate funding is not available, we need to immediately adopt bold, fundamental changes in environmenal policy so that existing and costly regulatory approaches can be scrapped. Fundamental changes include: mandatory composting toilets, mandatory recycling, banning industrial processes that generate hazardous waste, and only allowing integrated pest management and organic agricultural practices. Which path do we take?
In closing, EPA currently does not have the legislative tools to accomplish the air toxics portion of the Great Lakes Water Quality Agreeement. Your active support for a reauthorized Clean Air Act, that includes restrictions on air toxics, will go far in demonstrating your commitment to Great Lakes Protection.

Thank you for the opportunity to testify.

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*Citizen Action
to Save a
Great Lake*

Testimony presented by Cameron Davis, Lake Michigan Federation, before the Subcommittee on Oversight of Government Management, Committee on Governmental Affairs
April 28, 1989   Grand Rapids, Michigan

Good Morning, Mr. Chairman. My name is Cameron Davis, Program Associate for the Lake Michigan Federation. The Federation is the only citizen's non-profit organization dedicated solely to the rehabilitation of water quality in Lake Michigan, its tributaries and surrounding environment. The Federation was formed in 1970.

ANNEX 2 -Remedial Action Plans

Progress in Areas of Concern (AOCs), in general, has been disappointing. While RAPs for 7 of the 10 Lake Michigan AOCs have been released in either draft or final form, and while most RAPs adequately describe and define AOC problems, most flatly fail their ultimate purpose: to evaluate current remedial programs and to evaluate as well as propose additional actions needed to clean up the AOC. The U.S. Environmental Protection Agency (EPA) Great Lakes National Program Office (GLNPO) has in many instances provided technical support to the states in developing Remedial Action Plans (RAPs) that has resulted in some improvements in the state documents.

GLNPO generally recommends improvements in RAPs but has rarely insisted that remedial action evaluations and recommendations are as thorough and extensive as possible. For example, most RAPs merely recommend additional testing, sampling, or studies; and while these may be good steps in some instances, they are not remedial actions. In addition, while it should be strongly noted that the states have the lead in conducting public outreach, GLNPO can take a more aggressive line in insisting on citizen participation in the RAP processes. Because GLNPO provides grant money to the states for RAP development, we believe GLNPO can use this "carrot" more effectively to set, oversee, and enforce important requirements: for example, Citizen's Advisory Committees (CACs) should be comprised of citizens with a wide variety of interests (environmental, industrial, recreational, etc.) and should be involved in planning and development of the RAPs from the earliest stages. Too often--particularly in Michigan--the interested public has merely been presented with a completed RAP and asked to react.

Two RAPs have stood out, however, from all others to date: the Green Bay RAP is one. This can be attributed largely to a broad and active CAC with strong support from the

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Wisconsin Department of Natural Resources (WDNR). The Green Bay RAP can be clearly distinguished from the other RAP experiences because the CAC there, a large and diverse body, was given a free reign--at least at early stages of the process--to set its goals and recommend actions for achieving those goals (over 135 recommendations in all) without preconceived political inhibitions. The battle is only half won at this point, of course, because the RAP must still be implemented. A number of structural problems and confusion over mandate are still being resolved by that committee, and EPA could probably play a very helpful advisory role. GLNPO has played a very important role already in Green Bay, however, by funding a comprehensive mass balance study, the results of which are already proving useful in understanding problems in other areas, notably Saginaw in Michigan. GLNPO's role, however, should limited to mere funding and technical assistance.

A local and regional citizenry also helped the Michigan Department of Natural Resources (MDNR) assemble a RAP for the Kalamazoo River AOC. This RAP was also unique in posing and evaluating potential remedial actions, such as dredging, biodegradation, and others. Here again, implementation has yet to be carried through. Nevertheless, the Kalamazoo RAP has been successful in proposing remedial actions when all others, except the Green Bay RAP, fail to evaluate and propose remedial actions. The Kalamazoo River RAP's success has been largely due to strong personal commitment by individual MDNR staff members and through an aggressive and concerned citizenry.

The most dismal failure by the EPA, GLNPO and a state involved in any Lake Michigan RAP process has been at Waukegan Harbor, Illinois, a Superfund site known in some circles as the worst PCB mess in the country.

In the fall of 1988, the EPA signed a consent decree with the responsible polluter, the Outboard Marine Corporation (OMC). The U.S. EPA and Illinois EPA (IEPA) have stated that *when and only when* clean-up pursuant to the consent decree is complete will an official RAP be *considered.* Few other EPA positions could violate the GLWQA as flatly as this one.

This joint EPA and IEPA position (that an official and functional RAP may not be written until the consent decree is implemented, *if a RAP is to be written at all*) violates the letter and the spirit of the GLWQA in a number of ways:

1.) The GLWQA *mandates*, in Annex 2, 4., (a) that the EPA and state a RAP *must* ensure a RAP is developed for each AOC, of which Waukegan is one.

2.) The decision to write a Waukegan RAP later, if at all, is a unilateral decision by state and federal authorities without any attempt to achieve GLWQA Annex 2, 2., (e) which requires that:

> The [U.S. EPA], in cooperation with [the] State...shall ensure that the public is consulted in all actions undertaken pursuant to this Annex. (emphasis added).

The public was not consulted at all in this decision. Further, as clean up pursuant to the consent decree may not be complete until 1992 or 1993, a RAP will not even be considered, according to our communications with the IEPA, until then. RAP Implementation may thus not occur, if at all, until a decade from now.

3.) RAPs are designed to promote long term and comprehensive maintenance of AOC water quality. The consent decree for Waukegan Harbor in no way satisfies this requirement as it is merely a blueprint for quickly cleaning up an isolated part of the Harbor, with no consideration for rehabilitating other contaminated areas of the Harbor. Experience has shown that only public involvement in and "ownership" of a project will effectively clean up the watershed in question and ensure that it stays clean. The RAP concept was developed to ensure, through long term citizen's participation, that an AOC is cleaned and stays clean.

The consent decree for Waukegan Harbor has already failed to meet RAP standards in a number of ways:

1.) It fails to include other parts of the harbor which the EPA's own data show is contaminated*. This failure to include contaminated Slip # 1 and the lower harbor could, according to my conversations with the U.S. Army Corps of Engineers, cost taxpayers up to nearly $ 9 million, a cost that should be borne by the responsible polluter, not the public.

2.) It is an agreement between two principal parties - OMC and EPA - negotiated for years behind closed doors. Public participation has been held by the EPA to one hearing and one comment period for citizens to react to the consent decree. The public was never allowed to know about specific negotiations, let alone participate in writing the consent decree. While we accept the fact that enforcement actions are not, and should often not be open to the public, the Waukegan experience merely indicates a true public participation vacuum; which furthers the need for a RAP.

3.) The U.S. EPA's clean up threshold for PCBs is inappropriately set at 50 parts per million (ppm). This level is a policy-based figure and does not take into account a number of factors affecting bioavailability of PCBs to the water column, fish and wildlife.

The U.S. Fish & Wildlife Service has recommended .05 mg/kg** PCBs as a clean up threshold protective of fish and wildlife in Great Lakes tributaries. The EPA's own PCB criteria for sediment, currently being developed, are likely to be much lower than past EPA guidelines and hopefully will be flexible enough to deal accurately with specific local situations. Those criteria are not in place yet, however, and are not likely to be within the next year or two, while the Waukegan clean-up is taking place. A variety of studies on Waukegan Harbor show Slip # 1 and lower harbor sediments as containing PCBs exceeding the U.S. Fish & Wildlife Service .05 mg/kg threshold. One study even shows levels of over 60 ppm - exceeding even the inappropriately high 50 ppm policy-based level.

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* The Lake Michigan Federation supports the U.S. Fish & Wildlife Service's threshold of .05 mg/kg PCBs in sediment as the most protective threshold to date. Sediment levels exceeding this threshold may be considered contaminated.

** 1 mg/kg is roughly equivalent to 1 ppm.

In short, the EPA, by stating that the IEPA does not have to proceed with RAP development until later, if at all, violates the RAP provisions of GLWQA Annex 2.

A Solution:

The Lake Michigan Federation has offered to pursue funding for a CAC and has recommended that the EPA and IEPA contribute. By assembling a CAC charged with participating in RAP writing and making decisions affecting AOC water quality rehabilitation and maintenance, the EPA can work toward eliminating these violations. A CAC can help decide where the consent decree satisfies RAP requirements, where the decree is not satisfying RAP requirements, and the Committee can begin writing now rather than years from now. The EPA would then have assisted in developing a RAP and providing for public consultation as required by the GLWQA.

LAKE MICHIGAN AREAS OF CONCERN REMEDIAL ACTION PLAN STATUS

1.) Manistique River: The Michigan DNR has released a third draft RAP after submitting to and receiving comments from the International Joint Commission (IJC). Aside from additional testing, no remedial actions have been taken, to our knowledge, in the Manistique River Area of Concern. Public participation has been limited to the Michigan DNR's holding two meetings.

2.) Menominee River: Although this river is the border between

Michigan and Wisconsin, the Wisconsin DNR has taken the lead on writing this AOC's RAP. A Scope of Study, or outline for the RAP, was recently completed. Due to strong local enthusiasm for river rehabilitation in the Cities of Marinette, Wisconsin and Menominee, Michigan, this RAP has a great deal of potential to be a thorough and comprehensive one.

3.) Green Bay/Fox River: The RAP is completed and the implementation has yet to be carried through. The RAP is considered by many to be one of the most thorough and ambitious of the 42 Great Lakes Areas of Concern. While there has been a GLNPO presence during RAP development, GLNPO involvement in RAP implementation is minimal, if existent at all.

4.) Sheboygan Harbor: A draft RAP is being finalized and thus has not yet been submitted to the IJC. GLNPO's role in the RAP process has been limited to giving a grant to the Wisconsin DNR for a RAP coordinator and to making comments on the draft. GLNPO has not played a role in citizen participation; however, the Superfund program at EPA has released some updates and publications and has held public meetings. A local citizen's group has participated in the RAP process there as has the Lake Michigan Federation.

5.) Milwaukee Harbor: A Scope of Study has been completed. The Wisconsin DNR has been reluctant to appoint a broad-based Citizen's Advisory Committee, and the EPA is not insisting that one be appointed even though it has given the state a grant for a RAP coordinator.

6.) Waukegan Harbor: A consent decree has been agreed upon by the EPA and the principal polluter to clean up the harbor. However, the consent decree does not meet the RAP requirements and the EPA has indicated that a RAP may not even be written.

7.) Grand Calumet River/Indiana Harbor Canal: This AOC was the first of any of the Great Lakes AOCs to develop a RAP prototype, then called a "Master Plan." This plan was released in 1984 and served as a partial basis for a RAP. However, five years later, a RAP for this AOC has yet to be released to the International Joint Commission for review. A draft RAP was recently released, but contains little new data and is vague in the extreme where specific remedial actions are concerned. The EPA has funded programs for the local citizen's group, but has been unable to sustain that involvement due to lack of funding.

8.) Kalamazoo River: Despite constant delays in release to the International Joint Commission for review due to a lawsuit by a local polluting party, the draft RAP for the Kalamazoo thoroughly evaluates current remedial actions, as well as evaluates and proposes future remedial actions. This RAP is also unique in that it gives clean up cost estimates. GLNPO has provided technical support here.

9.) Muskegon Lake: GLNPO technical support on this RAP has been demanding, but has resulted in getting the RAP to propose few concrete remedial actions. Public participation has been limited to about two hearings.

10.) White Lake: Here again, GLNPO technical support has resulted in some strong improvements, but the RAP nevertheless fails to propose far-reaching remedial actions. Public participation has been limited to about two hearings.

ANNEX 2 - Lakewide Management Plans

Annex 2, aside from requiring RAP development, requires that "Lakewide Management Plans" (LMPs) be written for each lake. The EPA and states have the sole responsibility for the Lake Michigan LMP.

Because the LMP process in many ways mirrors the RAP process, there are many steps the EPA and states can and should take to avoid the difficulties now apparent from the RAP process.

1.) Help fund a CAC to take the LMP to the public, to help write the LMP and *ensure* its implementation.

2.) Because many programs to achieve LMP goals are currently in place but require better enforcement, the primary purpose of LMPs should be to evaluate current remedial measures and to recommend additional steps needed to clean up Lake Michigan. (Annex 2, 6., (a), (v & vi). However, since it would be impossible for the EPA and states to evaluate their own regulatory and enforcement programs entirely free from bias, the CAC, with representatives from environmental and public interest groups, recreational interests, industry, farming and agriculture and others, should be appointed by the Director of the Great Lakes National Program Office. The CAC and its GLNPO-appointed members should have full authority with EPA staff to write, revise and seek implementation of the LMPs. The CACs, in addition, should be charged with conducting workshops to educate the public and receive citizen's comments on the LMPs. For Lake Michigan, neither the states nor the EPA have informed or educated the public on the Lake Michigan Toxic Pollutant Reduction Strategy. The CAC should also be charged with filling that gap.

3.) Guidelines for CAC participation should clearly and unequivocally call for each members' firm commitment to setting LMP goals first, then implementing those goals with all due diligence once they have been established. Although the LMP process should be one that allows for goal and implementation flexibility, rehashing the LMP's goals, once implementation has begun should be kept to an absolute minimum. Public education and inspiring citizen participation should be a consistent LMP goal.

ANNEX 13 - Pollution from Non-Point Sources

Annex 13, 3. states that the EPA shall identify, preserve and rehabilitate wetlands where necessary. While the EPA's Water Division, at least in Region 5, has commendably taken a more aggressive stance on wetland preservation, GLNPO's role has been very limited.

Wetland issues cut across many lines of natural resource management: water quality, groundwater quality, non-point source pollution control, soil conservation, land planning, wildlife and fisheries management, and botany, just to name a few. Although Water Division, and not GLNPO, has the regulatory authority on wetland preservation, GLNPO is the only EPA office officially charged with working toward Great Lakes protection using the "ecosystem approach," or more simply put, pursuing Great Lakes protection in all media, not just water. The most appropriate role for GLNPO in carrying out wetland protection as per Annex 13 is in identifying wetland complexes for preservation and rehabilitation. GLNPO has, to its credit, helped initiate a Great Lakes Wetland Protection Strategy within recent months, but staff time dedicated to this project hovers around 10-25% for one person. The review of significant Great Lakes permit applications is minimal. Here, GLNPO's involvement, although severely limited, is not due to any lack of commitment of concern, but low funding.

ANNEX 14 - Contaminated Sediments

The importance of contaminated sediment as a pollutant source to the Great Lakes was recognized by the addition of this important annex to the new 1987 protocol to the Great Lakes Water Quality Agreement. And new data developed since then provides even more urgency for the issue. Studies have found three to six times more malformed embryos than usual of double-crested cormorants, a colonial nesting bird, around Green Bay and Saginaw Bay. The birds' diet-- of which a major portion was local fish contaminated with PCBs -- is mostly responsible for the abnormalities. Similarly caspian terns in Lake Michigan have experienced a 20-fold increase in deformities over the past 25 years, with a 105-fold increase around Saginaw Bay. Some Great Lakes ducks have 60 times the level of PCB contamination as poultry in grocery stores. (Exposures from the atmosphere and the sediment are critical). This is of particular concern to duck hunters but also to the nation in general as a large portion of the duck population passes through the Great Lakes basin during seasonal migration. In addition, fewer birds born in these highly contaminated areas are returning to breed in following years. Presumably, they aren't surviving. The warnings delivered by Rachel Carson in "Silent Spring" are clearly still relevant!

U.S. EPA has taken a number of steps to carry out its responsibilities under this Annex.

o First, a GLNPO staff member served as co-chair and principal author of a two-volume report by the International Joint Commission's Sediment Subcommittee on assessment and options for remediation of the contaminated sediment problem.

o Second, EPA's water division at the headquarters level has coordinated the development of an innovative multi-divisional Sediment Task Force (with people from GLNPO, the Marine & Estuaries office, Superfund, Criteria and Standards, Hazardous Waste, etc.) to work on criteria development and other issues.

o And third, GLNPO's Sediment Demonstration Project, authorized by Congress under Section 118 of the Clean Water Act, after a slow start, is beginning now to make some real progress--in documenting the nature of the sediment itself and the distribution and extent of pollutants in specific sites, in identifying which treatment technologies and disposal options are most appropriate for the different sites, and in beginning to narrow down the information that is absolutely essential for proceeding with pilot tests.
While we have had some concerns about the length of time taken by GLNPO in developing an organizational structure and scope of work for this project, we feel that the project is moving forward fairly quickly and with considerable energy now.

It is also our understanding that there has been some Congressional concern over particular disbursements of funds for this Demonstration Project in fiscal 1989 and over delays in getting some actual on-the-ground demonstrations underway. These have been concerns of ours as well, but we understand that some essential risk assessment analysis is necessary right now before the next logical steps can be taken in all five areas--and that those assessments can be most efficiently and accurately undertaken at Sheboygan Harbor and/or Buffalo. We feel it is appropriate to defer to the scientists' judgment on this matter, and we applaud GLNPO's decision to keep the risk assessment research to a practical minimum, given the limited funds available. It is our strong hope that this effort will move us further and more quickly to a point where we can see some actual tests of innovative technologies, and we understand that at least one proposal has been submitted to do a "turnkey" test of one or more technologies at one location--possibly Indiana Harbor Canal or Saginaw Bay-- that may be implementable later this summer, depending on the outcome of other field work underway. We feel it is best to support maintained momentum on this project; its findings can be extremely helpful in furthering RAP implementation, Lakewide Management Plan implementation, and Superfund implementation. The EPA has been very aggressive about including public participation in the contaminated sediment program and, in general, providing opportunities for public input at early stages of this project--but micro-managing the scientific aspects of the project from a distance should be avoided where possible. We very much appreciate the very informed interest and support offered already by this subcommittee on this important effort and hope it will continue.

In addition, when Congress authorized the expenditure of funds for a five-year demonstration project on contaminated sediment, the authors of the bill intended that 40% of new money above the baseline operating budget should be appropriated annually by GLNPO be spent for contaminated sediment work. But disagreements on this issue spurred a colloquy on the floor by interested members of Congress to clarify Congressional intent. During appropriation discussions this year, the question has been raised again, but we hope that logic will prevail. We are concerned that if 40% of GLNPO's entire operating budget, as opposed to 40% of new money, must be spent on contaminated sediment over the next few years, their role in implementing the overall objectives of the Great Lakes Water Quality Agreement will be severely skewed. Further, Congressional intent will again be circumvented to no clear, constructive purpose that we can discern.

ANNEX 15 - Airborne Toxic Substances

A recent International Joint Commission study suggests that the atmosphere may be the largest pathway for many toxics to the Great Lakes. For example, 99.5% of Lake Michigan's lead, 59% of its PCBs, and 86% of its benzo (a) pyrene (a product of incomplete combustion that can cause cancer) come from the atmosphere.

However, monitoring for only 2 of the more hazardous air toxics in the Great Lakes is currently in place. This monitoring, for PCBs and for dieldrin only, takes place at two sites in Green Bay and one site in the Upper Peninsula. The most extensive monitoring program, the Great Lakes Atmospheric Deposition (GLAD) network, monitors for metals and criteria pollutants. While Annex 15 clearly requires that the EPA "determine atmospheric loadings of toxic substances to the Great Lakes System," only one polychlorinated compound, one pesticide and a few heavy metals are monitored out of the hundreds of toxics listed in Appendices 1 and 2 and implicated in Annex 2 of the GLWQA.

In addition, efforts to comply with perhaps the most important provision in Annex 15 are severely limited. Annex 15 (b) calls on the EPA to "understand the effects of persistent toxic substances...on the health of humans and the quality and health of aquatic life where a significant source of these substances is the atmosphere."

Initiatives to comply with these important Annex 15 provisions rests with the Administrator, via GLNPO input, to more aggressively seek funding as per Section 118 of the Clean Water Act and for Congress to recognize the insidious threat toxic fallout present to the Great Lakes and their residents by boosting funding levels for these air toxic monitoring programs.

Thank you for this opportunity to share with you our thoughts and suggestions on the U.S. EPA and Great Lakes National Program Office's efforts to enforce the Great Lakes Water Quality Agreement.

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Citizen Action to Save a Great Lake

TESTIMONY BEFORE THE

SENATE SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT, COMMITTEE ON GOVERNMENTAL AFFAIRS

Tuesday, May 23, 1989 --- Green Bay, Wisconsin

Good morning, Senator Kohl. My name is Rebecca Leighton, Green Bay Office Director for the Lake Michigan Federation. The Federation was formed in 1970 as the only citizen's non-profit organization dedicated solely to the rehabilitation of water quality in Lake Michigan and its tributaries in the four surrounding states.

We are grateful for your interest in the Great Lakes Water Quality Agreement of 1987 (GLWQA), and appreciate this wonderful opportunity ot address you on the topic here in Green Bay.

My colleague in the Lake Michigan Federation, Cameron Davis, testified at the Michigan hearing on this subject on April 28. I'll try not to repeat his testimony, but will simply attach it to mine as a reference.

For the last 3 years, I've served on the Citizen's Advisory and Implementation Committees for the Remedial Action Plan for cleaning-up the toxic contamination and over-enrichment of the lower Fox River and Green Bay. In this time, our community has developed one of the first, and most thorough, plans of all the 42 Areas of Concern on the Great Lakes. Now, the Implementation Committee has the enormous task of making this plan work.

It will be a long, complicated process, because the Green Bay plan makes more than 135 different recommendations which cut across many seemingly unrelated issues, such as recreation, wildlife habitat, toxics controls and land run-off controls. We truly attempted to use the "ecosystem approach" called for in the Great Lakes Agreement.

I also serve on the 8 month old Menominee River Citizen's Advisory Committee which is just beginning the process of writing a Remedial Action Plan, shared by the Cities of Marinette (Wisconsin) and Menominee (Michigan).

During work on these plans, problems have arisen. Some have been solved, while others remain. By sharing this information it should be possible to spare other Areas of Concern some of our mistakes.

In addition, we hope to call attention to national program needs for critical issues beyond the abilities of local communities. The 42 Areas of Concern have many similar needs.

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THE CURRENT CONDITION OF LAKE MICHIGAN

At a time when national attention is focused on the oil spill catastrophy in Alaska, it's appropriate to point to our similar problems on Lake Michigan. We also have a tragedy here --- the major difference is that our toxic spill occurred over a longer period of time, sometimes knowingly and deliberately, and little public attention has been granted to the major economic and environmental consequences of the contamination.

1. Sediments, Water And Wildlife Are Contaminated With Toxics

More than 1,000 chemicals, many with toxic properties, have been identified in the sediments and waters of Lake Michigan --- from air pollution, water pollution, land run-off and other sources.

All fish species in the Lake are contaminated, and the states have issued fish-eating advisories for many species. Virtually none of the fish would be considered edible, if our advisories followed a one-in-a-million cancer risk standard for limiting human health problems. (Unfortunately, our current advisories allow a one-in-ten-thousand risk, according to toxicologists with the Wisconsin Division of Health.) The value of the Green Bay fishery alone has been estimated at $50 million annually, therefore toxic contamination causes direct economic losses. Our tourist industry, which we promote so heavily, has been damaged.

In addition, several duck species are contaminated, requiring health advisories warning hunters to limit waterfowl consumption.

Wildlife is suffering. Fish have developed excessive tumors and reproductive problems. Several species of fish-eating birds (Terns, Herons, Gulls, Cormorants, etc.) are suffering birth defects and reproductive problems, linked with toxic contamination. Other large bird species, such as Eagles and Osprey, and some sensitive species of mammals, such as Otter and Mink, are noticeably absent from the shores of Lake Michigan, even where habitat is available.

Approximately 13 million people live in the Lake Michigan basin, many depending on the Lake for drinking water. (Some communities have been forced to find expensive alternatives to river and lake drinking water, due to severe contamination.) Many people eat Lake Michigan fish as a regular source of inexpensive protein --- especially important to low-income families.

Unfortunately, no definitive human health studies have been conducted to determine the cumulative health effects of toxic contamination on people living in the basin. So far, it's been too expensive and difficult, and we've been forced to rely on limited human and animal studies.

In addition to the health concerns, sediment contamination creates severe problems for harbor and channel maintenance, due to the high expense of environmental precautions during dredging and disposal.

2. Wetland and Habitat Losses Have Been Severe

Wetlands are valuable for their rich waterfowl and fish-spawning habitats, as well as their beneficial filtering effect for improving water quality. Unfortunately, the Lake Michigan shorelines have lost huge acreages of wetland. In lower Green

Bay, more than 90% of the orginal wetlands are gone, and we no longer see the enormous clouds of waterfowl they once hosted. Fish spawning has suffered greatly. Numerous other species, including many endangered, have declined drastically.

Other habitat types have been over-run by people as well --- the dunes, beaches and other water-edge areas, which are critical nesting or feeding habitats for some species of wildlife.

People suffer from such losses as well, as game and wildlife species disappear, and as recreational enjoyment of these areas is denied. The shoreline of Lake Michigan is being rapidly occupied and privatized. This has a direct impact on the tourist industry.

3. The Lake Is Too Fertile

Too much phosphorus and nitrogen is entering the Lake, from pipe discharges, air pollution, and land run-off, causing over-fertilization of algae and aquatic vegetation in several nearshore areas. This causes degradation as the water becomes choked or clouded with excessive growth.

REMEDIAL ACTION PLANS

Lake Michigan hosts 10 areas requiring Remedial Action Plans, under Annex 2 of the Great Lakes Water Quality Agreement. Unfortunately, most of the plans are unfinished or slow to being implemented, for a variety of reasons:

1. More Staff Support Needed to Write Plans

The EPA seems to underestimate the resources necessary to complete good plans. In Green Bay, more than 80 local people and several top-notch scientists participated on 5 separate committees organized by subject matter. Numerous meetings were held, but even then it took more than 2 years to finish the plan after the public participation and committee efforts started. At least a year prior to that was used internally by the DNR to prepare for the planning.

This level of effort requires much more staff support than the EPA has been willing or able to fund. Invariably, major committees break into several subcommittees, and the coordination become horrendous. Just the secretarial and editorial needs are overwhelming. Also, the technical nature of the topics must be explored and overcome. It's impossible to write plans quickly when each committee meets only monthly and the writing contributions are largely the unpaid work of voluntary committee members.

While it may be tempting to solve this problem by eliminating the public participation and committees, it must be recognized that the local community needs to develop a sense of "ownership" if the plan is to succeed. It must be "their plan". The process is also a rapid education for community leaders in the value and complexity of their nearby water resources. The investment of staff time at this point will pay later as these leaders become more aware and committed to protecting the Great Lakes.

Broad participation also ensures that everyone has an opportunity to add ideas, correct mistakes or omissions, and build understanding between conflicting interests. The combined talents of an entire community are necessary resources for staff assigned to write comprehensive plans.

2. Remedial Action Plans Require Fundamental Policy Changes

These plans often challenge and redirect the basic, established policies and activities of the natural resource agencies. This creates more work and complexity, as the agencies try to adjust their programs and funding.

Therefore, I believe there is a natural tendency, perhaps unconcious, to avoid making these plans as comprehensive and demanding as they should be --- allowing the agencies to continue on their present course undisturbed. Public participation also adds to the discomfort of the agencies. Of course not all agencies or personnel have this tendency, but these concerns contribute some internal conflict which limits agency enthusiasm for the RAP process.

As an example: in Green Bay, our Toxics Technical Advisory Committee recommended that "chronic toxicity (be eliminated) at end of pipe from industrial and municipal wastewater discharges with a target date of 1996." The Citizen's Advisory Committee supported this recommendation if it was necessary to meet their goals, (which, by definition, it is). However, the DNR's final plan made a much weaker recommendation: "identify areas where chronic toxicity in discharge mixing zones may jeopardize fish and aquatic life uses, and identify steps to remedy, if necessary." Again, by definition, chronic toxicity harms aquatic life, therefore necessitating action --- but the DNR backed-off from making a firm commitment in the plan.

3. Plan Writing Requires Technical, Research Support Staff

Generally, the staff assigned to write RAP's are Planners, not technically qualified to write on the multitude of ecosystem recommendations required for a good plan. Therefore, they must consult with many experts and absorb a tremendous amount of information to compile the basic data, then coordinate the formation of recommendations.

These plans would develop more quickly if technical experts could be assigned coordination of basic information gathering and writing for the Technical Committees, leaving the planners free to coordinate Committee meetings, integrate their results and build concensus.

4. More Staff Support Needed to Coordinate Implementation

The final plan is only the beginning. The real work of implementation must also be staffed to handle the strain of a massive coordination effort. These are ecosystem plans, involving many highly technical and complex issues, which are often politically controversial and misunderstood as well. They can't be successfully coordinated by just one or two people.

Implementation requires a complex committee structure, similar in its demands to the orginal structure required for writing the plan.

These plans, if done properly, involve every person and business in the watershed to some extent. Many major government and private agencies, outside of the DNR and EPA, must be convinced to cooperate effectively.

This is an enormous task, but the benefits are also enormous. These Remedial Action Plans finally cut across the barriers within our agencies which artifically separate related problems into Bureaus which communicate poorly. For example, water quality isn't affected just by pipe discharges --- it is also affected by air pollution, land run-off, leaking landfills, wetland losses, etc. --- and all our resource management programs must be adjusted accordingly.

5. The EPA and DNR Must Exhibit More Internal Consistency With The Plans

Now that the Green Bay Remedial Action Plan is finished, we're concerned about the DNR's and EPA's apparent weak commitment to thorough implementation of the plan. We've seen numerous local, state and federal actions which conflict with the intent, even the express recommendations, of our RAP. We hope that as more RAP's near completion we will see stronger support from these lead agencies.

I've attached a letter sent to DNR Secretary Carroll Besadny, detailing several of these conflicts.

The EPA appears to take a "hands-off" approach to our local RAP recommendations, leaving implementation decisions entirely to the Wisconsin DNR. It would be helpful for the EPA to assert their regional, even international, interest in promoting our RAP more aggressively. The DNR appears too vulnerable to local political pressures.

6. The Plans Must Use An Ecosystem Approach

Several plans from around the Lakes are incomplete, due to the oversimplification of their remedies. They did not look at the entire ecosystem --- the interaction of land, air, water, humans and wildlife, and the combined effects on water resources --- necessary to identify root causes of problems and priorities for action. Instead, they attempted to solve only a few obvious problems. Some plans don't even recommend solutions, only further study --- which is clearly inadequate.

The EPA should have been emphasizing, all during the planning processes, the requirement in the Great Lakes Agreement that these plans use an ecocsystem approach and offer actual remedies. It's unfortunate that several years have been wasted writing plans without this direction and enforcement from the EPA. In Green Bay, we've had very little input from the EPA. Our leadership in support of the ecosystem approach came largely from the local scientific and environmental community, not from the agencies.

7. The EPA Must Provide More Leadership

I don't recall any significant participation by the EPA in developing the Green Bay Remedial Action Plan. If representatives attended meetings, they were largely silent --- and certainly took no leadership roles in setting minimum policies for the RAP content. Luckily, we had several strong leaders in the local and scientific community, as well as a strong DNR coordinator, Lynn Persson, who tried to adhere to the intent of the Great Lakes Water Quality Agreement.

Other Areas of Concern would benefit if EPA would participate and lead more effectively in plan writing and implementation efforts.

LAKEWIDE MANAGEMENT PLANS

Ten RAP's will not solve Lake Michigan's water quality problems, therefore the Water Quality Agreement, in Annex 2, wisely called for a Lakewide plan to integrate these plans into a comprehensive effort. This has started slowly and appears to face many of the problems listed above. As mentioned by Cameron Davis, we recommend the following to improve progress towards a Lakewide Plan:

- A Citizens Advisory Committee should be formed to educate, build public participation, assist in writing the plan, provide viewpoints from outside the agencies' influence, and build momentum for implementation.

- The Lakewide Plan should Proactively Identify Critical Pollutants, not simply attempt to eliminate those few pollutants which have already proven to be problematic. Prevention is critically important --- environmentally and economically.

The EPA could start this comprehensive effort by focussing more attention on writing Great Lakes basin-wide water quality guidelines for reducing and eliminating toxic discharges, consistent with the Water Quality Agreement --- and insisting that any state rules on this issue also be consistent. So far, we've seen a bare beginning of leadership in this direction --- but it's long overdue and carries no certainty that it will be an adequate effort. Public participation and Congressional monitoring are needed.

POLLUTION FROM NON-POINT SOURCES (LAND RUN-OFF)

Annex 13 of the Water Quality Agreement clearly calls for reductions in pollution run-off from landuse activities. Urban and rural non-point sources are a major source of nutrient and toxic pollution to the Great Lakes.

1. EPA's Non-point Programs Must Be Funded

The EPA lacks the money to address this problem. Although $400 million was authorized under the Clean Water Act in early 1987 for Non-point Programs, no funds have been appropriated for non-point pollution control in either of the two subsequent fiscal years. and none have been budgeted for the coming year.

2. Wetland Protection Must Be Funded

The EPA also lacks funds for promoting their Great Lakes Wetland Protection Strategy, as outlined by Cameron Davis in his testimony.

CONTAMINATED SEDIMENTS

An estimated 40% of all the waterborne PCB's reaching Lake Michigan come from the Fox River and Lower Green Bay, largely from suspended sediments which carry the PCB's.

Most toxics in our fish and wildlife appear to come from old chemical contaminants accumulated and stored in the sediments from past discharges. Therefore, a large share of remedial funds and actions must be focussed on sediments, if we want to get good results with our Remedial Action Plans.

Unfortunately, this is a neglected issue. None of our existing federal programs address sediment contamination, except in rare instances. Therefore, we make the following recommendations:

1. National Sediment Criteria Should Be Developed And Enforced

The EPA should develop guidelines for national sediment criteria, to guide dredging and disposal actions, which take into account long-term, bioaccumulative ecosystem, as well as human, effects of toxic contaminants. This should be possible by December 31, 1989. Specific numerical criteria should be established for particular organic chemicals and heavy metals --- with an emphasis on Clean Water Act priority pollutants --- and other chemicals deemed to have a significant impact on water quality and aquatic species at a rate of 22 chemicals per year for the next five years.

2. A National Contaminated Sediments Fund Should Be Established

The U.S. General Accounting Office should be asked to conduct a study to be completed by July 1990 that estimates costs and identifies funding options for a National Contaminated Sediments Fund, Such a study should consider the following options: "user fees or permit processing fees for --- harbor authorities, direct dischargers who contribute pollution, commercial water users such as marinas, or the private firms with whom the U.S. Army Corps of Engineers contracts for dredging operations; fines levied against transportation and shipping industries for spills and discharges; and court revenues received through liability claims and enforcement actions against Clean Water Act violators.

3. An Office of Contaminated Sediments Should Be Established

Once a funding mechanism is established, based on the study above, an Office or Division of Contaminated Sediments should be set up within EPA to insure a greater priority for site assessments, criteria and standards assessment, and remediation efforts.

4. The Corps Should Have Expanded Authority

The mission of the U.S. Army Corps of Engineers should be expanded to include responsibility for environmental remediation of contaminated sediments, with review requirements by the EPA and U.S. Fish & Wildlife Service, as well as final approval authority by the EPA. Public participation and hearings should also be required for all remediation proposals.

5. Dredging Priorities Must Be Assessed

The EPA should conduct an assessment and develop priorities of locations where dredging for navigation or other purposes is, or is not, essential.

6. Dredging Should Be Regulated As Point Source of Pollution

Monitoring guidelines and regulations should be developed for dredging of contaminated sediment as a potential point source of pollution by the EPA. This is needed because some dredging activities stir up inactive chemicals buried deeply in old sediments --- creating water quality problems not otherwise present. The technology exists to minimize this problem. However, in some cases, it may be better to leave the sediments in place until more permanent solutions are found.

7. Best Available Technologies Should Be Defined And Used

The U.S. Army Corps of Engineers, in consultation with the EPA should designate Best Available Technologies for all remedial actions in areas where concentrations of chemicals exceed sediment standards. These technologies should not be finalized without EPA approval, and public participation in the review, and should be completed within the next three years. Frequent technological updates should also be required according to a set schedule.

AIR TOXICS

Half or more of the new toxic pollution entering the upper Great Lakes comes from air pollution. According to EPA, 2.7 billion pounds of 320 different chemicals are released annually into the atmosphere by major chemical and manufacturing industries --- and this figure is a gross underestimate, due to weaknesses in the Community Right-to-Know Law's reporting requirements listed below.

The attached data sheets show local releases in Northeast Wisconsin which concern us greatly.

Annex 15 of the Great Lakes Water Quality Agreement calls for the reduction and elimination of toxic discharges, particularly of persistent chemicals.

In the 17 years since the Clean Air Act was first passed, only seven of the 320 chemicals EPA looked for are presently regulated by EPA as toxic health hazards --- an astonishing failure. Four of the top ten emitting states are Great Lakes states, and this fact combined with well-documented proof of long-distance transport of chemicals in the atmosphere demonstrates the need for an Air Toxics Law at the federal level. A bill has been introduced in Congress, S 816, but it has many serious weaknesses which need strengthening:

1. "Best of the Best" Technology Should Be Used

S 816 doesn't set a minimum standard for Best Available Control Technology (BACT) standards. National legislation should set such a floor, otherwise the EPA may set weak standards, as they have in the past.

2. Elimination of Toxic Emissions Should Be The Goal

S 816 fails to set an ultimate objective of zero emissions of toxic air pollutants, even though industry leaders such as Union Carbide and Monsanto are optimistically working toward a zero emissions goal for carcinogens.

3. One-in-a-Million Cancer Risk Standard Should Be Minimum

S 816 sets no deadline for reaching a one-in-a-million standards for residual cancer risks from air pollution. A preliminary standard allowing one-in-ten-thousand cancers is likely to remain in effect for a long time, and is unacceptably threatening to human health, and could result in thousands of unnecessary additional cancers in the U.S. each year.

4. Area Sources Must Be Controlled

S 816 provides far too much EPA discretion for the control of toxic emissions from so-called "area sources" --- dry cleaners, paint shops, etc. that emit significant amounts of volative organic compounds. History has shown that few controls are likely to be put into place if EPA is not provided with clear legislative direction and timetables.

COMMUNITY RIGHT TO KNOW

The attached information on toxic chemical releases in Northeast Wisconsin was made available through the Emergency Planning and Community Right-to-Know Act (EPCRA or Title III of the Superfund Reauthorization). Such detailed data is crucial to emergency responses, enforcement of the Water Quality Agreement and implementation of the Remedial Action Plans. It needs to be as complete as possible.

Unfortunately, this information is seriously flawed and the program needs to be improved in the following ways:

- The EPA needs major increases in its enforcement of reporting requirements. and monitoring of the accuracy of those reports.

- Section 313 should be amended to increase the number and kind of facilities required to report --- to provide accurate cumulative information for each community. Currently, the EPA is proposing to permanently set the reportable quantities at very lax high levels, when we had previously understood that they would become progressively more tight in coming years, providing more information to the public. We feel the minimum reportable quantities need to be smaller. 10,000 pounds of a toxic chemical, as a minimum, is not adequate. If 100 companies each released 1,000 pounds of a toxic chemical in a city, this would total 100,000 pounds of exposure to the public. This is not insignificant, especially for persistent toxic chemicals that accumulate.

- The information needs to be compiled in a meaningful way for the public, not in coded language as it currently appears in the reporting forms. Funds are needed to develop coordinated, comprehensive reporting of community totals, interpreted in laymen's terms.

- The forms should include information on the rate and concentration of toxic chemical releases from each reporting facility.

WATER TOXICS

One of our greatest problems with the Water Quality Agreement is the EPA's lax interpretation of how it should be applied to pollution discharge permits. In the seventeen years since the Clean Water Act was first passed, we've not seen the EPA's programs evolve to realistically address persistent toxics. They treat these compounds like conventional pollutants which break down after discharge.

The EPA has not provided leadership strictly requiring states to reduce toxic discharges, even though the Water Quality Agreement clearly calls for the virtual elimination, or zero discharge, of these chemicals. Instead, the EPA endorses state programs that rely largely on dilution of toxics, and standards based on concentration, rather than the total loadings which would be more appropriate. If the states choose to be stronger, the EPA doesn't object. But the EPA doesn't really help either, leaving much of the complex work of setting technical standards and building local political support for toxics controls to understaffed state agencies. Like an absentee landlord neglecting his properties, the EPA has neglected its responsibility to participate, encourage, provide guidance and impose minimum standards consistent with the Water Quality Agreement.

Last week, the EPA approved Wisconsin's Water Toxics Control Rules, NR 105, NR 106 and NR 207, with one modification relating to PCB's. We are greatly disturbed by this action, as the rules clearly allow many circumstances of dilution. The EPA argues that the rules give the DNR authority to make many good restrictions in pollution permits, but we have no assurance in the rules that these restrictions will in fact be required. We are concerned that even the PCB modification may not be applied to the current round of permits up for renewal --- meaning another five years of PCB discharges as usual --- because the EPA inexplicably gave the DNR another year to modify their PCB rules. Such delays are unreasonable.

The DNR proposes to issue a new five-year pollution permit to Wisconsin Tissue Mills on the Fox River which would allow a net increase in toxic discharges, under the so-called "anti-degradation rule", NR 207, approved by the EPA. This is just one example of numerous permits the Lake Michigan Federation has objected to.

The DNR claims this input is "insignificant" relative to the high sediment contamination of the river itself --- but by using this logic, virtually any new discharge would be minor compared with the sorry condition of the river. (In effect, this rewards industry for past pollution.) How can we hope to make progress with such an attitude? As we start to reduce toxic discharges, will the DNR simply assign new pollution rights to new industries, thereby neutralizing the benefits of our hard work? I've asked this question several times at RAP meetings, with no answer from DNR staff.

Such increases in toxic dumping violate the recommendations of our Remedial Action Plan and the Great Lakes Water Quality Agreement, which both call for reductions and final zero discharge of toxics.

Wisconsin DNR prefers to believe that our rivers and lakes can absorb a set amount of toxics each year without harm, a concept known as "assimilative capacity". This is directly contrary to the Great Lakes Agreement. The science of toxicology is so new and inexact, that the net effects of the approximately 65,000 chemicals in regular industrial use are still virtually unknown. The agencies attempt to calculate "risk assessments" which sound authoritative, but are really only scientific guesses of minimum effects based on limited data. Other drawbacks include:

- Serious health effects besides cancer often remain unstudied, such as birth defects, behavioral changes, immune system damage, nervous or respiratory damage, skin diseases, etc.

- The combined effects of human exposure to all chemicals from multiple exposures is not understood --- from drinking water, air, food, residential and occupational sources. Scientists may never fully understand these effects, due to the complexity and expense of the necessary tests. Just one rat test for cancer involves 700 rats and costs about $400,000. It must be repeated several times to ensure accuracy. It will be extremely difficult to perform tests on all 65,000 common chemicals, and all their possible combinations. It would be easier and cheaper to simply prevent the release of chemicals to the environment, until they can be proven safe. Unfortunately, a chemical is now considered "innocent until proven guilty", forcing taxpayers to fund tremendously expensive testing programs to allow the agencies to prove and stop toxic discharges, often after it's too late and the contamination has already occurred. A policy of zero discharge, as called for in the Great Lakes Agreement, should allow the agencies to act more directly, if they would only choose to apply the policy.

- Most federal and state discharge standards underestimate the potential for toxics to bioaccumulate through the food chain --- allowing low concentration discharges which build up to dangerous toxic levels in fish and birds.

- Most standards are based on the average, middle-aged white male, ignoring the fact that some life stages are much more vulnerable to toxicity --- such as unborn or very young children, or the elderly. In addition, a small percentage of people in every population are acutely sensitive to toxic effects, due to genetic vulnerability. In Green Bay, we have an Allergy Support Group for 30 or more individuals diagnosed as having "environmental illnesses". Some have letters from doctors urging them to leave Green Bay, due to their severe allergic reactions to local air pollution. Many are extremely sick.

February 9, 1989

Mr. Carroll Besadny, Secretary
Wisconsin Dept. of Natural Resources
P.O. Box 7921
Madison, WI 53707-7921

Dear Secretary Besadny,

The Lake Michigan Federation has participated over the last three years in the development and implementation of the Green Bay/Fox River Remedial Action Plan. We feel the final plan was a good one which we could support, even though we felt there were sections which needed improvement. However, we are deeply disappointed with the DNR's apparent lack of commitment to the RAP over the past year, as evidenced by the following list of example issues:

DNR ACTIVITIES INCONSISTENT WITH THE GREEN BAY RAP

Since the Green Bay/Fox River Remedial Action Plan was signed by yourself in February of 1988, your agency has taken several actions affecting the area of concern which are inconsistent with the goals or specific recommendations of the RAP.

1. Lack of Staff Support - During the first year of RAP Implementation, when it was most critically important to show progress and develop momentum, the DNR withheld staff support for organizing the efforts of the Implementation and Advisory Committees. Several Advisory Committees weren't even formed until December, 1988, fully ten months after the RAP was signed. Because of this, our meetings have been infrequent and less organized than they should be, missing opportunities which require timely action.

2. DNR Blocking Consideration of Important Issues - Several times over the last year, DNR staff on the Implementation or Advisory Committees have discouraged the group from investigating critically important issues for implementation purposes. For example, the Water Toxics Control Rules were raised as a high-priority RAP recommendation, yet staff spoke against consideration of these rules in either the Implementation or the Advisory Committees, claiming the rules were too complex and time was too short for review. As a result, these Committees missed several opportunties to comment on specifics of the rules, as described below.

The Department seems reluctant to entertain discussions of policy issues which conflict with existing DNR policy --- thereby thwarting one of the main purposes of the Remedial Action Plan: to improve DNR policy.

3. Imbalanced, Poor Choices for Implementation and Advisory Committees - The DNR appointed many ineffective members to these Committees --- people who were unfamiliar with the RAP, too busy to educate themselves on the issues, and several who don't even support the recommendations of the RAP. Members frequently skip the meetings.

In addition, these committees contain too few RAP supporters to foster good debates on the issues. Business, and Government representatives far outnumber environmentalists, resulting in stifled efforts to promote action and discussion.

4. Water Toxics Control Rules - The DNR has proposed rules NR 105, 106 and 207 to the EPA for controlling toxic discharges from NPDES permit holders. Several portions of these rules violate a high-priority objective of the RAP: "Eliminate Toxicity of Municipal, Industrial and Other Point Source Discharges." Two examples of particular violations include the regulation of only two Arochlors of PCBs and the use of ZID's (Zones of Initial Dilution) where acutely toxic concentrations of chemicals would be allowed in mixing zones downstream from dischargers.

5. Green Bay Metropolitan Sewerage District - Over the past year, GBMSD has held several public hearings concerning proposed new facilities to upgrade the plant's treatment capability. The Commission finally decided to support a minor improvement using nitrification and additional filtration, with DNR's concurrence during the public hearing process. (Many members of the public favored a more advanced carbon filtration system to address persistent toxics problems, but the GBMSD Commission chose a less effective filtration method.) Though DNR had participated in the public hearings and plan review process for more than a year, the agency waited until the last few weeks to announce that the plan was unacceptable for grants and unnecessarily strict. The DNR would only support the nitrification stage of treatment, and barely that.

This change is directly contrary to the objectives stated in the RAP, where all point source dischargers are encouraged to reduce their effluent concentrations of nutrients and toxics whenever possible. The Commission's facility plan to include filtration would have been at least a minimal step in the right direction. However, the DNR blocked even this minor improvement.

6. Point Source Discharge Permits - Several NPDES permits for major dischargers on the Fox River are proposed for renewal by the DNR, with allowable toxic limits and discharge practices which violate the recommendations of the RAP. For example, Fort Howard will be allowed to continue discharging PCBs and other contaminants at their current rates, under the absurd assumption that their discharge is insignificant relative to the sediment PCB contamination already in the River. This ignores the bioaccumulative aspect of persistent toxics.

In addition, P.H. Glatfelter will be allowed to mix large quantities of their non-contact cooling water (Fox River water) with their process water prior to the application of discharge standards and water quality criteria. This is blatant dilution of pollution and it also ignores the accumulation of toxics in the receiving waters.

The DNR is purposely rushing these permits to completion, in an effort to avoid the application of the new Water Toxics Control Rules, while telling the public that the rules represent significant progress. In this rush, meaningful public participation is being discouraged. We've been given one week's notice to prepare for major discharge permits for 6 different industries. It will be four years before we have another opportunity to comment. The short notice precludes the use of hearing notices in newsletters for statewide and regional public interest groups because they use bulk-mail procedures which can take a week to ten days to reach their destination. The hearing has also been scheduled during the day, which assures heavy attendance by DNR personnel and discharger lobbyists, but eliminates the opportunity for the public to be heard. This attempt to exclude and rush the public appears to be intentional.

7. McDonald Marina Proposal - The DNR is proposing to issue wasteload allocation rights to this structure due to its adverse impact on other wasteload allocated industries in Cluster III. The marina developers would either purchase or reach a non-monetary agreement for assumption of WLA rights from these affected industries. DNR Staff have said that if such an agreement were reached the DNR would issue permits for the marina.

This proposal would contradict many recommendations in the RAP concerning wildlife habitat preservation, rehabilitation of Bay Beach for swimming, endangered species protection, island stabilization, dissolved oxygen goals, sedimentation reduction, proper disposal for contaminated sediments, etc.

While the RAP does call for more recreational facilities and public access to the waterfront, this particular site is too environmentally sensitive to justify a marina. Alternative sites must be investigated more thoroughly than outlined in the Environmental Assessment just issued.

The most serious concern about this location is the impact this structure will have on the water circulation patterns in the lower bay. The DNR appears only concerned about impacts on dischargers, and ignores major erosion or siltation changes outside the WLA grid used by Dale Patterson. He himself has stated that the model shows even greater effects from the marina than from the proposed Kidney Island expansion. The Island has already caused extensive sedimentation along the east shore and accelerated erosion on other islands due to the deflected river currents. The added impediment of the marina would greatly increase these adverse impacts, possibly leading to stagnation severe enough to cause dissolved oxygen sags along the East Shore. The WLA model must be expanded to include the entire lower bay to address this problem, before 401 water quality certification can be justified.

8. Endangered Species - The DNR Bureau of Endangered Resources has endorsed a destructive development on the Fox River shoreline by the Fox River Docks Corporation which would permanently destroy critical habitat for a state listed endangered plant, the Seaside Crowfoot, in order to create 9 new jobs. In addition, the Department has promoted a destructive "mitigation" project in Oconto County to compensate for this dock project.

First of all, the DNR bungled their ill-advised transplant effort this last fall by killing all the Crowfoot plants which were transported and killing existing Crowfoot plants which were in another colony picked to host the transplants. (This lumping of colonies makes the remaining plants only more vulnerable to destruction and disease.) The DNR staff made matters worse by dumping a load of salt in the transplant colony, killing more plants, because they mistakenly believed the plants were endangered because they were salt-dependent. Several botanists at the University of Wisconsin Green Bay had warned against the salt and advised the Department that the transplant effort would fail. The DNR ignored these experts.

Secondly, the supposed mitigation for this project would occur in a different County in a different type of habitat where Seaside Crowfoot does not exist. Worse yet, existing natural wetlands would be altered and destroyed by dredging and construction of water control structures to allow management for waterfowl. There would be a net loss of wetlands, in direct violation of the RAP. The benefits for waterfowl in no way benefit the endangered plant. The DNR is following old ideas of single game species management at the expense of good ecosystem management for the benefit of all species in a wetland community.

9. Air Quality - The DNR recently passed a new Natural Resources Code for the regulation of toxic air emissions. Unfortunately, the staff promoted a major loophole in these rules for RDF (Refuse Derived Fuel). If less than 50% of the energy input to an industrial boiler is RDF then appropriate air pollution controls will not be required.

This has the potential to be a serious new source of toxic air emissions in the Fox River Valley, with large cumulative loadings of toxic runoff and direct deposition to the Area of Concern, as area communities turn to incineration to solve their solid waste disposal problems. This is directly in conflict with the RAP. The DNR's state-wide policy promoting numerous Waste-to-Energy projects is likewise counterproductive.

10. Waste Tire Incineration - The DNR is allowing Fort Howard to burn tremendous amounts of waste tires in their industrial boilers even though they are not fitted with adequate air pollution control devices. No monitoring studies have been done prior to allowing this, to ensure that public health will be protected.

Waste tires contain large amounts of zinc and other contaminants. These new toxic air emissions directly violate the recommendations of the RAP.

11. Leaking Landfills on the Waterfront - Several old landfills are being left without any remedial action, even in cases where the responsible parties for the waste are known --- such as for the WPS flyash dump, the City of Green Bay Military Avenue Dump, the Bay Beach Wildlife Sanctuary Dump, etc. The responsible parties should be required to immediately begin remedial efforts.

12. Dredging Rules - DNR staff who have worked over the past two years on the development of a new Natural Resources Code on dredging refuse to develop regulations to minimize resuspension of contaminated sediments during the dredging activity itself. This directly contradicts recommendations in the RAP.

13. Bulk Storage Piles - The DNR have consistently put off recommendations to regulate the stormwater runoff from bulk storage piles (coal, salt, lime, scrap metal, etc.) along the waterfront, even in cases where excessive toxic metal runoff have been documented.

14. Lack of Promised Public Hearing - Because of the DNR's ineffective support for the Implementation and Advisory Committees, a full year and seven months will have passed from the time the RAP was signed and the first public hearing will be held on the RAP Progress Report. The Report itself will be issued much later than promised.

15. Lack of Final RAP Document - A full year has passed since the RAP was signed, yet few of us have seen the final document. It should have been printed and distributed by now, while the public remembers what it is --- otherwise, we lose valuable education time and public support.

As you can see from this list, there are many issues where your agency does not appear to truly support the recommendations of the RAP. There are likely other areas where inconsistencies could be identified.

The Lake Michigan Federation urges you to make this Remedial Action Plan a higher priority within the Department of Natural Resources, by notifying all the DNR Bureaus of their specific responsibilties under the plan.

We would also ask that the inconsistencies listed above be corrected where possible, before further damage is done to the credibility of the RAP process.

Sincerely,

Rebecca Leighton

Rebecca Leighton,
Green Bay LMF Office

WARNING --- CHEMICAL RELEASE DATA IS INCOMPLETE

The attached information on chemicals released in Brown, Winnebago and Outagamie Counties is incomplete, for the following reasons:

1. Many Facilities Have Not Submitted Reports Required By Law

These listed facilities are the only ones who have complied with the reporting requirements under Section 313 of SARA (Community Right to Know Law). Statewide, the Wisconsin DNR estimates that at least 50% of those required to report have not done so. In Brown County, the Local Emergency Planning Committee estimates that 70% of the facilities are not complying.

The Region Five Office of the EPA is only conducting 180 investigations in the five states under its jurisdiction, to determine if facilities which should report are doing so. Only 30 will be done in Wisconsin, even though 600-700 facilities have reported out of a potential 65,000 estimated by the Wisconsin DNR as the types of operations which might need to report.

Lack of compliance causes a large under-estimation of total toxic chemical emissions in our local area.

2. No Agency Is Monitoring Accuracy of the Reports

Even the data already submitted could be inaccurate, because the DNR, EPA and other responsible agencies don't check the accuracy of their records. Some minimal cross-checking with other regulatory programs is planned in the future, but little direct monitoring or inspection will occur. Even the 30 facilities investigated by the EPA this year will only be checked on whether they should be reporting, not on how much or what they are reporting.

When looking at the following lists of 16 paper mills in the Fox River Valley, it's clear that a great deal of variability is occurring. Two conclusions could be reached: first, some of the mills may be more honest and thorough, while others might be witholding information; or second, that some of the mills have much cleaner, healthier processes for making paper and better pollution control equipment.

3. Many Facilities Aren't Required to Report

Under Section 313, many facilities are exempted from reporting requirements if they fall into the following categories: less than 10 employees, smaller facilities of certain classifications, or facilities with less than 10,000 pounds (about 18 barrels) of chemicals used or released.

The cumulative impact of many such small facilities could be much greater than the single impacts of large facilities. 10,000 pounds can be enormously important depending on the types of chemicals, and where or how they're released.

4. This Information Doesn't Describe the Intensity of the Release or Exposure

To describe health risks, it's helpful to know how concentrated and extended a person's exposure is to a given chemical. Unfortunately, the data is too generalized to make accurate risk estimates. It is possible to say, however, that the cumulative build-up of many of these persistent toxics, and the multiple chemical exposures, could have major environmental and health impacts in the long-term. The science of toxicology is inadequate for describing these risks.

TOTALS FROM BROWN, WINNEBAGO AND OUTAGAMIE COUNTIES IN 1987 - PRELIMINARY DATA

A Selection of Major Chemicals Used	Quantities Leaving Local Facilities (in Pounds)	Potential Human Health Effects
Toluene	1,200,000	Central nervous system depressant Suspected human carcinogen Narcosis Anemia (affects red blood cells) Leukopenia (affects white blood cells)
Xylene	395,040	Respiratory irritant Central nervous system depressant Suspected human carcinogen
Chloroform	349,216	Human carcinogen Central nervous system effects Narcosis Skin irritant Respiratory irritant Gastrointestinal symptoms
Methyl Chloroform (also known as 1,1,1, Trichloroethane)	345,791	Mutagen Anesthetic Nervous system effects Liver effects Heart effects Suspected human carcinogen Damages Earth's Ozone Layer (like CFC's)
Formaldehyde	81,800	Human carcinogen Respiratory effects Chemical hypersensitivity effects
Perchloroethylene	48,000	Human carcinogen
Trichloroethylene	1,800	Human carcinogen Central nervous system depressant Skin irritant Liver damage

Other totals --- these also have serious health and environmental implications:

Methanol	856,606 lbs./year
Titanium dioxide	1,535
Sodium hydroxide	80,685
Chlorine	57,746
Sulfuric Acid	128,010
Ammonia	873,335
Acrylic Acid	6,500
Hydrochloric Acid	140
Naphthalene	17,202
Acetone	78,000
Aluminum Oxide	4,625,000

Butanol	101,920 lbs/year
Zinc compounds	7,800
Bisphenol	17,000
Sodium sulfate	797,200
Nitric Acid	300
Tetrachloroethylene	1,200
Ethylene glycol	23,000
PCB's	12,000
Cumene	12,002
Trimethylbenzene	56,814

POUNDS OF TOXICS RELEASED IN 1987 - PRELIMINARY DATA

	Major Chemicals Used	Fugitive Air Emissions	Stack Air Emissions	Discharge to Water	Discharge to Sewage Plant	Off-site Transfer
BROWN COUNTY						
Fort Howard Corp. (Green Bay)	Ammonia	750		30,000		
	Chloroform	50,675	70,934	829		278
	Cumene	5,931				639
	Hydrochloric Acid					
	Naphthalene	5,931	5,432			639
	Phosphoric Acid					
	Sodium Hydroxide					
	Sulfuric Acid		80,710			
	Xylene	17,795	16,294			1,916
	Methyl Chloroform	325,282				6,607
	Trimethylbenzene	29,658	27,156			3,194
Green Bay Packaging (Green Bay)	Sodium Hydroxide			250	9	500
	Sodium Sulfate	37,000	120,000	340,000	13,000	6,400
	Sulfuric Acid		5,800	250		
	Methyl Chloroform	8,456				
Tape, Inc. (Green Bay)	Acrylamide					320
Procter & Gamble Paper (Green Bay)	Ammonia	35	5,300			
	Hydrochloric Acid		40			
	Nitric Acid				50	
	Sodium Hydroxide					
	Sulfuric Acid					
	Chlorine	10	53			
Nicolet Paper Co. (De Pere)	Chlorine					
	Sulfuric Acid					
	Sodium Hydroxide					
James River Corp. (Green Bay)	Ethylene Glycol	1,400	12,000			9,600
	Ammonia	1,400	13,000		550,000	7,200
	Sodium Hydroxide				750	750
	Methanol	250	130,000		720,000	750
	Chlorine	520	18,000			
	Sodium Sulfate				560,000	140,000
	Sulfuric Acid		250		40,000	750
	Chloroform	12,000	110,000		17,000	7,700
	Formaldehyde	250	47,000			2,750
	PCB					12,000

POUNDS OF TOXICS RELEASED IN 1987 - PRELIMINARY DATA

	Major Chemicals Used	Fugitive Air Emissions	Stack Air Emissions	Discharge to Water	Discharge to Sewage Plant	Off-site Transfer
WINNEBAGO COUNTY						
Banner Packaging (Oshkosh)	Methanol	4,200	480			750
	Titanium Dioxide					1,535
Gilbert Paper Co. (Menasha)	Sodium Hydroxide					
	Phosphoric Acid					
James River Corp. (Menasha)	Xylene	87,935				11,100
Kimberly-Clark Corp. (Neenah)	Chlorine					
Neenah Paper (Neenah)	Sodium Hydroxide					
	Chlorine					
P.H. Glatfelter Co. (Neenah)	Sodium Hydroxide		250			
	Chlorine	250	750			
	Sulfuric Acid		250			
	Ammonia			117,700		
	Hydrochloric Acid					
	Phosphoric Acid					
Wis. Tissue Mills (Menasha)	Acrylic Acid			3,400		3,100
	Hydrochloric Acid	100				
	Chlorine	10	1,100			
	Sodium Hydroxide	25				
	Naphthalene	100		800		4,300
	Phosphoric Acid					
	Chloroform	3,200	76,000	500		100
	Ammonia	100		8,300		
	Methyl Chloroform					2,400
	Perchloroethylene					48,000
	Methanol	100			75	

POUNDS OF TOXICS RELEASED IN 1987 - PRELIMINARY DATA

	Major Chemicals used	Fugitive Air Emissions	Stack Air Emissions	Discharge to Water	Discharge to Sewage Plant	Off-site Transfer
OUTAGAMIE COUNTY						
Appleton Papers, Inc.	Acetone		63,000			15,000
(Appleton)	Aluminum Oxide				25,000	
	Butanol		67,000		720	32,000
	Sodium Hydroxide				10,000	
	Zinc Compounds				7,800	
	Biphenol				17,000	
Kerwin Paper Co.	Sodium Hydroxide				70,410	
(Appleton)	Sodium Sulfate			97,200		
	Chlorine	2,983			27,646	
Midtec Paper Corp.	Sodium Hydroxide					
	Methyl Chloroform	2,983		63		
	Phosphoric Acid					
	Nitric Acid		250			
	Chlorine	250		5,803		
	Sulfuric Acid					
	Ammonia	250	1,050	85,335		
Thilmany Pulp & Paper	Formaldehyde		1,800	19,000		11,000
	Aluminum Oxide					4,600,000
	Xylene		260,000			
	Phosphoric Acid					
	Chlorine					
	Sulfuric Acid					
	n-Butyl Alcohol		2,200			
	Ammonia			89,000		
	Methyl Ester Ketone					
	Toluene		1,200,000			
	Sodium Hydroxide					
	Tetrachloroethylene		1,200			
	Trichloroethylene		1,800			

Testimony Prepared for the Subcommittee on Oversight of Government Management Hearing on Oversight of EPA and the Great Lakes Water Quality Agreement

May 23, 1989

Dr. H. J. Harris*

Some pollution problems have been identified and solved--I call these first order pollution problems. An example is the reduction of so-called conventional pollutants such as organic waste and suspended solids from municipal and industrial effluent. Here water quality standards have been set and new treatment facilities constructed with cost sharing from state and federal government. This has led in many instances to great improvements in the lakes.

A second class of problems I call second order problems is one where the cause of pollution is known and the technology is available for its resolution but implementation is slow to occur because of economic and political constraint. Such is the case with so called non-point source pollution where the pollutants come from diffuse sources such as agriculture and urban drainage rather than from the end of a single pipe. Much work remains to be done with 2nd order problems.

A different group of problems I call third order problems. These are problems which are not yet clearly defined, the magnitude of the effects of pollutants is not yet understood and solutions to the problem remain unclear. This is the case with persistant toxic chemicals such as chlorinated hydrocarbons and heavy metals. These materials have accumulated in fishes and can readily be passed to man. The toxic effects of such materials in many cases is not well understood. It will likely be 25 to 35 years before some of these kinds of problems are resolved.

* Portions of this testimony was extracted from a manuscript co-authored with P. Sager, H. Regier and G. Francis.

A fourth group of problems, or fourth order problems, are those which have yet to be identified. These are "surprise" problems which come about inadvertently by some of our own actions for which we do not understand the consequences. Fourth order problems become third order problems once we discover them.

And finally, fifth order problems are those for which we understand the cause but there simply are no solutions. An example of this kind of problem is that of species extinction. Once the species is extinct there is no possible way to restore it. There have been species of fish that have become extinct in the Great Lakes. A second example is invasion of exotic species such as lamprey and carp, which have become well established and cause immeasurable damage. Another example is the CO2 build up in the atmosphere with global warming and climatic change which, according to many, is bound to occur in the next 50 years or so. In these cases we cannot entirely reverse the problem; we can only begin to plan for the significant changes that are inevitable.

A group of European and North American scientists, of which I have been a member, have made a comparison of the problems of the Baltic Sea and the Great Lakes. Interestingly, although these two large ecosystems are quite different, the problems encountered in the system are very similar, if not the same. It has become increasingly clear that many of these problems arise from man's economic activities on the lands surrounding these great waterbodies. This does not mean that economic activities must be curtailed if problems are to be resolved. Rather, it implies that economic activities must become compatable with the ability to sustain the valuable resources associated with the Baltic Sea and the Great Lakes.

In Green Bay, as in many parts of the Great Lakes, I believe that we must deal with three significant stresses before beneficial uses can be restored. These are excess nutrients, (primarily phosphorus), from nonpoint and point sources, excess sediments and suspended solids and persistent toxic chemicals in the environment. I wish to direct attention to nonpoint source pollution problems, (primarily phosphorus), and to problems of persistent toxic chemicals, (primarily chlorinated hydrocarbons--e.x. PCBs).

Excess nutrients from agricultural activities contribute significantly to the degradation and loss of uses in the Great Lakes. Excess nutrients, (and erosion), impair sensitive uses such as swimming, fishing, waterfowl production, drinking water, clean industrial water, and aesthetic value. Excess nutrients cause excess algae growth and a process called eutrophication. This leads to a host of interactions which reduces the value of the Great Lakes as an integrated (whole) resource.

Significant strides have been made to reduce excess nutrients from point sources. Little significant progress has been made to reduce nonpoint sources from agricultural activities. The technology is available, but implementation has been blocked for decades by either economic, political, or cultural factors. This problem is particularly frustrating because it represents cumulative effects of individual activities where we are aware of cause and effect relationships and know how to solve the problem. We are left searching for excuses for non-resolution of a tractable problem. This is not the case when considering persistent toxic chemicals in the environment. Let me try to put this problem in perspective:

In developing nations 80 percent of all illness is attributed to unsafe water supplies, and millions of children under the age of five die annually from water-born, diarrheal disease. In comparison, the problem of toxic chemicals in the environment may seem pale at first glance. Environmental contamination with toxic chemicals, however, is not now confined to industrialized nations. Despite the fact that 80 percent of agrochemicals are used in developed nations, only 1 percent of deaths from acute pesticide poisoning are reported from these countries. It is estimated, that approximately 1 million people are poisoned by pesticides each year. Developing countries, with rapidly growing populations, demand for food production and tropical locations conducive to insect pests, have increased use of insecticides; 62% of all insecticides are applied in developing countries.

The problem of environmental contamination with toxic chemicals, particularly chlorinated hydrocarbons, may well be a less tractable problem than that of water-born disease. Cause and effect relationships of water-born disease problems are quite well understood, solutions are known and the technologies needed for remediation have been developed. Failure to resolve the problem seems to have more to do with socio/economic and/or political constraints, then with a dearth of knowledge.

In contrast, we know far less about cause and effect of chemical contaminants in the environment. The methodology for evaluating the impact of contaminants is inadequate, and the technology for remediation is only poorly developed. The specter of chemical contamination is one of the major environmental issues of this century and will likely be in the first several decades of the 21st century. Ecotoxicology has thus emerged as a major research area in response to a major social need. It employs both reductionistic science (toxicology) with strong predictive capabilities and holistic science (ecology) with recognizably weak diagnostic and predictive capabilities. This amalgamation is the result of an increasingly broad interest and concern for the impact of toxic contaminants on ecosystems. In few regions has there been more interest in this problem than in the laurentian Great Lakes.

Present methodologies employed to protect human health and the environment are admittedly less than certain. Part of the intractability of the impacts of toxic substances in the Great Lakes stems from our lack of understanding the impacts of toxic substances in complex ecosystems. Concern for extrapola-tion of data from standard laboratory species to more complex ecosystems has led to multiple species testing, chronic toxicity bioassays and more recently attempts to develop integrated field, laboratory and mesocosm approaches.[2] Yet, as Kitchell et al.[11] point out, "Miniaturization may retain a represen- tative physico-chemical context for studying complex interactions; however, the organisms of interest cannot be rescaled."

Present methods for toxicity testing also fail to deal with ecosystem complexity due to multiple causality and synergy of multiple stresses acting within the ecosystem simultaneously. Large aquatic ecosystems, particularly in nearshore areas, are frequently subject to a battery of human interactions. For example, researchers and resource managers have judged that no less than eighteen stresses (Figure 1) may be acting on the Bay of Green Bay, Lake Michigan. It is then useful to know which stresses are most strongly interactive and consequently influential in the ecosystem. "Stress ecology" seeks to understand the separate and joint effects of various kinds of interventions by humans (as well as natural phenomena) in the ecosystem. Stress ecology and graph theory have been used to assess the "health" of the Green Bay ecosystem. We currently believe that three stresses, excess nutrients, toxics (PCB's) and suspended solids and sediments, acting in an additive or synergistic fashion, are primarily responsible for bringing about

Suspended particles play an important role in the Green Bay system as they do in other Great Lakes ecosystems. The movements, repeated resuspension, and ultimate sedimentation of these particles are critically important to the transport and ultimate disposal of toxic contaminants. PCBs, which are major contaminants in the Green Bay-Fox River system, are a case in point. The degree and strength with which a contaminant attaches to a particle depends both on the contaminants physico-chemical properties and on the type of particle involved. PCBs are easily attached to organic-rich particulate matter. Depending on the type of PCB , 60-75 percent of the total load appears to be associated with suspended particles.

The adsorption of PCBs on phytoplankton provides a direct route into the food chain and leads to the contamination of fishes and other animals at the top of the food web (Figure 2). The effects of contaminant loading therefore can be modified by a number of factors such as wind direction and force, the number of top predators, herbivore biomass, macrophyte abundance, availability of phosphorus, etc. Frankly, it is difficult to see how a meaningful effluent standard can be set which, in fact, will protect, or in this case, restore integrity to the Green Bay ecosystem. We suggest that toxicity testing of effluent will give little guidance for achieving ecosystem integrity, particularly since approximately 90-95 percent of the PCB's discharged to Green Bay are believed to come from the sediments (Sullivan, Wisconsin Department of Natural Resources, pers. comm.).

The complexity and intractability of ecosystems as exemplified by Green Bay is a major reason for the difficulty of dealing with toxic contamination of ecosystems. Mathematical modeling of chemical fate is at present the preferred approach to this difficulty. One useful modeling approach integrates data on physico-chemical properties of the toxicant with hydrodynamic and/or areodynamic transport models. The U.S. Environmental Protection Agency, Great Lakes National Program Office, has initiated an unprecedented effort to deal with toxicants in Green Bay by development of a Mass Balance Model for PCBs (and three other toxicants). The model is intended to permit, ultimately, the prediction of PCB levels in three species of fish based on a known reduction of PCB loading to the system. The endpoint is predicated on the allowable limit of human consumption of contaminated fish (2PPM, PCBs). While this effort will undoubtedly reveal much needed information about the fate of toxicants in large scale aquatic systems, it will reveal nothing per se about toxic effects on the ecosystem.

One of the greatest challenges for toxicologists and ecologists is developing a means of predicting true ecosystem effects of persistant toxicants. In any case, model development and refinement have some distance to go before it is possible to accurately predict effects of toxic compound dosages in biota or humans. Furthermore, our present level of understanding of complex ecosystems limits our potential of prediction at that level.

The societal context is pervasive for issues of ecotoxicology. Toxic contaminant problems arise as the cumulative consequences of various polluting activities and they similarly impact on various social groups. Some impacts arise from more obvious ecosystem responses such as the biomagnification of toxics in fish via the food web, affecting sportsmen or commercial enterprises. Other impacts are more complex, like where do we place contaminated dredge spoils? It is possible in principle, and to some degree in practice, to estimate the economic consequences of these impacts in a community in terms of lost tourism revenues, shipping revenues, bankrupted businesses, or lost property values.

Degraded ecosystems, such as Green Bay and other areas of concern in the Great Lakes, reflect an historic allocation of resources towards those users and beneficiaries who were not dependent on maintaining high environmental quality or sensitive biota. Ecosystem rehabilitation strategies seek a reallocation in favor of the more sensitive beneficial uses and values. The basic issue is one of equity. It will be perceived in terms of the distribution of benefits and costs in a community that are associated with these shifts. Perceptions of the situation influences the response of the effected groups, and this in turn leads to efforts to mobilize the political will needed to solve the perceived problems.

Ecotoxicological analyses have a major role to play in documenting the conditions of degraded ecosystems. They can point to some of the causes and possible technical solutions. As rehabilitation proposals are made they too would likely be subject to benefit-cost analyses, risk assessments, or environmental impact studies, all promoted to help assure "rational decision-making." However, they can contribute in this way only on the condition that the basic processes for decision-making are perceived by all concerned to be legitamate and fair. If not, the analytical techniques and those who use them risk falling under considerable public distrust. Analysts may then be perceived as deliberately attempting to mystify the questions which ought to be asked, obscuring the reality of who actually pays the social and environmental costs and who benefits, and disguising disputes that are really based on fundamentally different values.

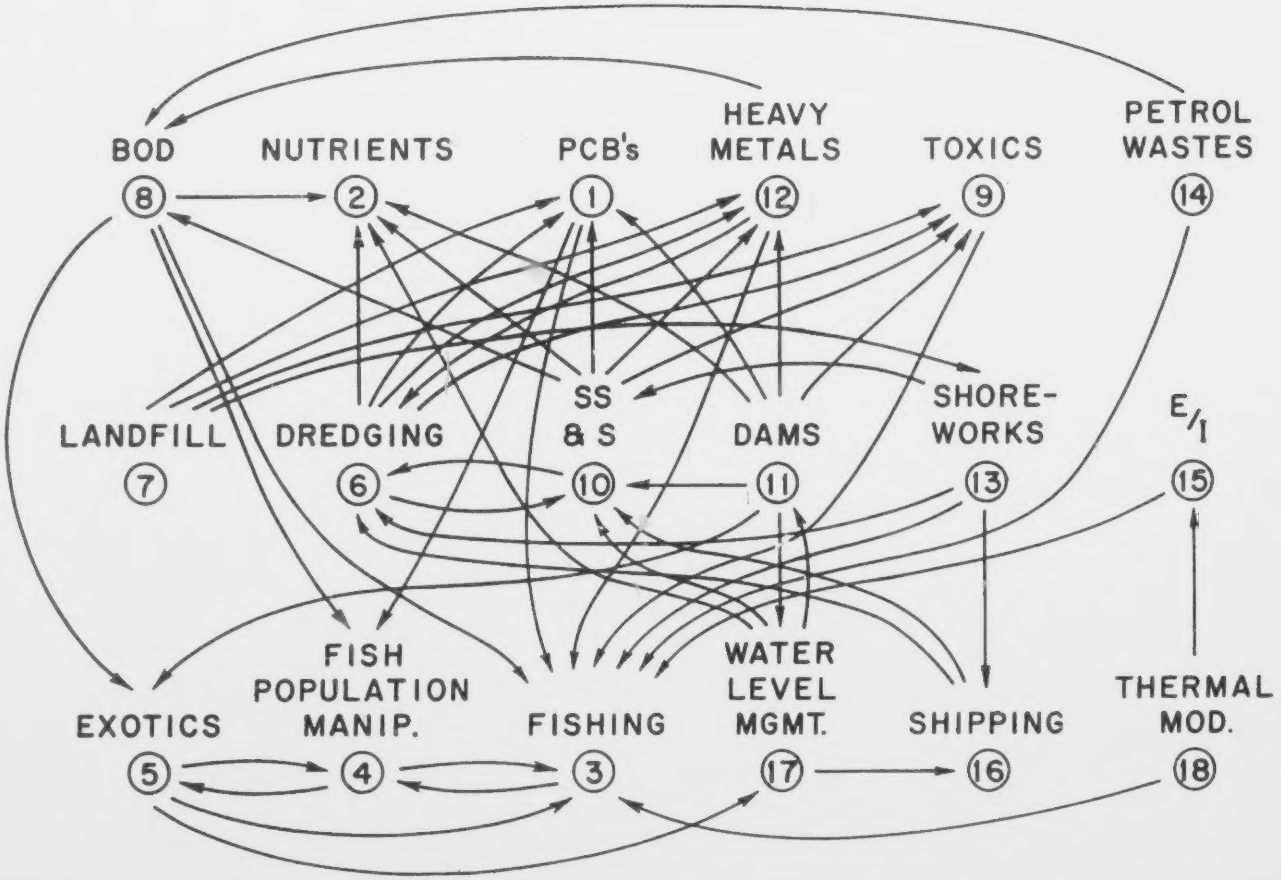
Benefit-cost analyses and risk assessments have already fallen into considerable disrepute because of their perceived use as political tactics. The call for refined mass balance studies of toxics in the environment instead of source reductions towards "zero discharge" can easily be perceived the same way. This kind of situation might be avoided by focussing less attention on details of the techniques and giving much more awareness to the social context within which they are being applied.

Trust and distrust have important bearings on the successful implementation of strategies for ecosystem rehabilitation directed towards restoration of "ecosystem integrity" and ultimately to striving for a more sustainable society. There are several reasons why.

1. Rehabilitation and the search for sustainability are social learning processes. The only thing clear about this is that no one organization or professional specialty can achieve this by going about it on their own.
2. The number of agencies, organizations and other groups ("actors" or "stakeholders" in sociological terms) who would have to be involved even for relatively localized efforts can be impressively large. The remedial action planning process for Green Bay involved 25 actors. For the 2160 hectare Hamilton Harbour on the west end on Lake Ontario, the remedial action planning process involves consultations with at least 48 stakeholder groups, including 21 governmental bodies at five different levels of hierarchical authority.
3. Given this relatively complex overlay of organizations and groups the potential for conflicting values and interests among groups is considerable.

If rehabilitation and a sustainable society require quite major changes in underlying beliefs and values, (moving from a technocentric to a ecocentric position), intergroup tension could rise to levels that are not easily manageable. This is also part of the present intractability of the toxic contaminants problem.

While progress on the first order problems in the Great Lakes has been substantial, it has not been sufficient to restore many benificial uses. We are now faced with the more difficult and enormously expensive problem of cleaning up mistakes of the past. One thing is increasingly clear, once persistent toxic chemicals are in the environment they are largely unmanagable. Science and technology have a role to play in further rehabilitation of the Great Lakes system, but our future outlook must be toward prevention and the development of a sustainable ecosystem.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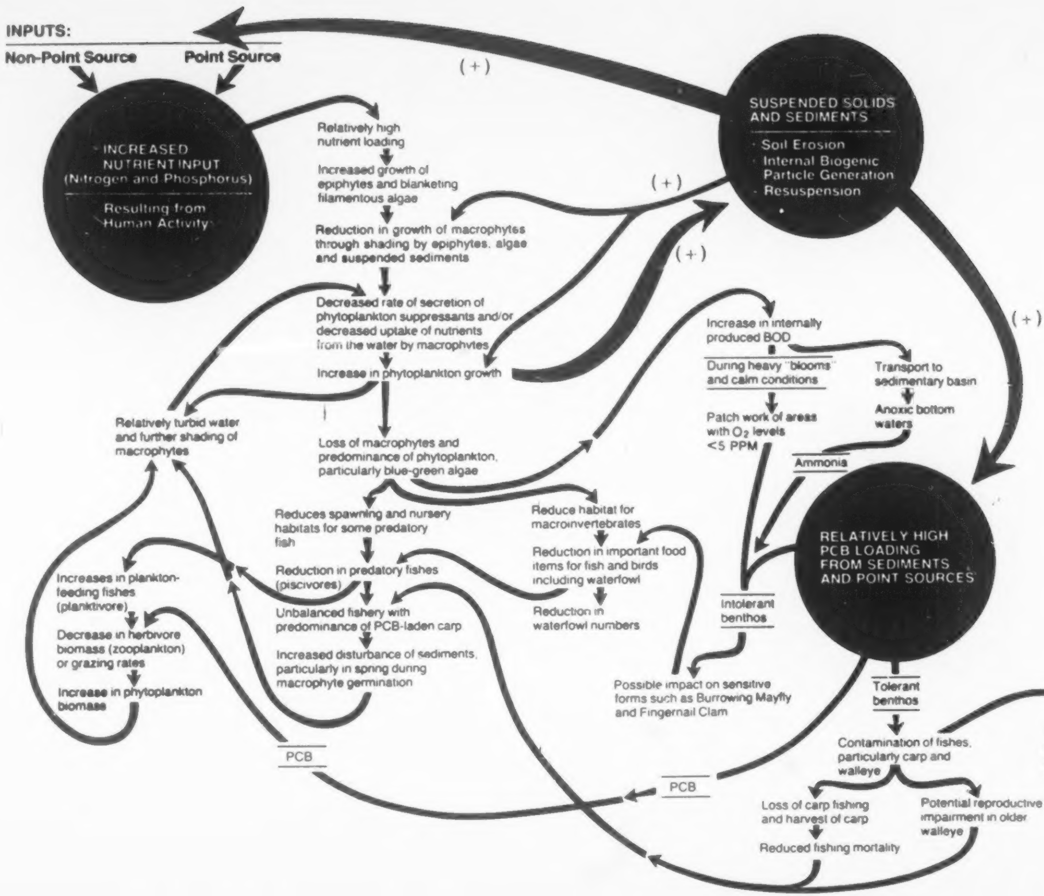
INPUTS:
Non-Point Source
Point Source
INCREASED NUTRIENT INPUT (Nitrogen and Phosphorus)
Resulting from Human Activity
SUSPENDED SOLIDS AND SEDIMENTS
· Soil Erosion
· Internal Biogenic Particle Generation
· Resuspension
RELATIVELY HIGH PCB LOADING FROM SEDIMENTS AND POINT SOURCES
(+)
(+)
(+)
(+)
Relatively high nutrient loading
Increased growth of epiphytes and blanketing filamentous algae
Reduction in growth of macrophytes through shading by epiphytes, algae and suspended sediments
Decreased rate of secretion of phytoplankton suppressants and/or decreased uptake of nutrients from the water by macrophytes
Increase in phytoplankton growth
Relatively turbid water and further shading of macrophytes
Loss of macrophytes and predominance of phytoplankton, particularly blue-green algae
Reduces spawning and nursery habitats for some predatory fish
Reduction in predatory fishes (piscivores)
Unbalanced fishery with predominance of PCB-laden carp
Increased disturbance of sediments, particularly in spring during macrophyte germination
Increases in plankton-feeding fishes (planktivore)
Decrease in herbivore biomass (zooplankton) or grazing rates
Increase in phytoplankton biomass
PCB
Reduce habitat for macroinvertebrates
Reduction in important food items for fish and birds including waterfowl
Reduction in waterfowl numbers
Increase in internally produced BOD
During heavy "blooms" and calm conditions
Patch work of areas with O_2 levels <5 PPM
Transport to sedimentary basin
Anoxic bottom waters
Ammonia
Intolerant benthos
Possible impact on sensitive forms such as Burrowing Mayfly and Fingernail Clam
Tolerant benthos
Contamination of fishes, particularly carp and walleye
Birds and mammals including humans!
Loss of carp fishing and harvest of carp
Reduced fishing mortality
Potential reproductive impairment in older walleye
PCB

LIST OF FIGURES

Figure 1.

Interaction of anthropogenic stresses on Green Bay. Notice how suspended solids and sediments (SS&S) interact with a large number of other stresses and how toxicants show a high degree of connectivity. E.I. stands for empingment and entrainment of larval fishes. Toxics refers to chlorinated hydrocarbons other than PCBs (from Harris et al. 1982).

Figure 2.

Ecosystem actions, coactions and interactions which may modify ecosystem toxicity (adapted from Harris et al. 1988).

STATEMENT OF MR. DONALD J. SCHNEIDER, DIRECTOR OF RESEARCH & DEVELOPMENT, FORT HOWARD CORPORATION, BEFORE THE UNITED STATES SENATE SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT ON MAY 23, 1989 RELATIVE TO ACTIONS TAKEN BY THE ENVIRONMENTAL PROTECTION AGENCY TO IMPLEMENT THE GREAT LAKES WATER QUALITY AGREEMENT OF 1978

STATEMENT

My name is Donald J. Schneider and I am Director of Research & Development for Fort Howard Corporation located in Green Bay, Wisconsin. Fort Howard Corporation is a leading producer of sanitary and food service products such as toilet tissue, toweling, napkins, cups, plates, straws, as well as ice cream cones. Our corporate headquarters is located in Green Bay, Wisconsin. We manufacture tissue products at this site and our employment totals 3200 people.

Fort Howard's tissue facility in Green Bay produces approximately 1,000 tons/day of paper products. The raw material for these products is wastepaper that is recycled to reclaim the useful fiber. We operate two other tissue mills in the United States; altogether we recycle approximately one million tons of wastepaper per year. This amount of wastepaper saves the equivalent of 65 square miles of forest each year while also greatly reducing the need for landfill space. If that paper had to be disposed of in a landfill, it would cover 115 acres to a depth of 15 feet each year.

I participated as Fort Howard's representative in the preparation of the Lower Green Bay Remedial Action Plan (RAP). I served as a member of the Toxics Substances Technical Advisory Committee to the Citizens Advisory Committee who developed the RAP. I am continuing to work with the RAP on several subcommittees of the Implementation Committee. I presently am a member of both the Toxics and Point Source Management Advisory Committee and the Monitoring and Research Advisory Committee.

My comments today will follow the order as suggested in your letter inviting my participation in this hearing. Therefore, the first item I would like to discuss is the status of the Green Bay Remedial Action Plan and the prospects for successful implementation of that plan.

Implementation

The lower Green Bay Remedial Action Plan was approved as part of Wisconsin's Water Quality Management Plan by Secretary Besadny of the Wisconsin Department of Natural Resources (DNR) on February 23, 1988. This plan has just recently been approved by the International Joint Commission which oversees the implementation of the Great Lakes Water Quality Agreement of 1978.

The March/April 1989 issue of Focus, a publication of the International Joint Commission, states on pages 17 & 18 that the commission completed its review of the Fox River/lower Green Bay RAP at its March executive session. I would like to quote from page 17 of that document as follows:

> "Fox River/Lower Green Bay RAP"
>
> "In general, reviewers involved in the WQB (Water Quality Board) process felt that this RAP was a good example of combining significant public involvement and an ecosystem approach to development of a RAP. They concluded that Stage one requirements and Annex 2 of the Agreement (i.e. problem definition and identification of causes) had been met. Stage two requirements (i.e. identification of remedial actions) have been partially met; additional studies are being performed to identify remedial actions for contaminated sediments. Further, they felt that there needed to be specific agent responsibility for each remedial action identified. Wisconsin Department of Natural Resources (DNR) is addressing these concerns and has established an implementation committee to help identify lead management agencies to implement the plan."

Since the plan's approval by the Wisconsin DNR, work has started on implementing the plan. An Implementation Committee has been organized along with various subcommittees to provide assistance and input to the operations of the implementation group.

The Wisconsin Department of Natural Resources has made significant strides toward the implementation of the 16 key action areas identified by the plan. As the International Joint Commission stated in their review, the identification of remedial actions has been partially met and additional studies are being performed to identify the remedial actions for contaminated sediment. Of major significance is the mass balance study of the sources, environmental pathways, and fate of several toxic substances in Green Bay. This mass balance study is being conducted through the cooperation of the EPA, Wisconsin DNR, University of Wisconsin Sea Grant and others. A March 16 & 17, 1989 workshop conducted by the Research & Monitoring Subcommittee of the Implementation Committee identified over 20 studies which are presently underway, all of which will have impact on the Remedial Action Plan. Much of this data, essential to guiding actions on this enormous task of remediation, are now being collected and will be available within one to two years.

It is my belief that the implementation of the Remedial Action Plan can be successfully accomplished, however it is a tremendous task to undertake. It is essential that the necessary data base be successfully collected, analyzed, and interpreted before implementing the plan. This will better insure its success environmentally as well as to obtain maximum value for the money spent.

The second area to be addressed is the participation by Green Bay's corporate/industrial community in the development and implementation of cleanup plans, and plans for future involvement and cleanup activities.

Industrial Participation

The industrial community has been very active in the development and implementation of cleanup plans. This is expressed by industries' involvement in the various advisory committees to the Implementation Committee as well as work with the Wisconsin DNR to implement the Clean Water Act's goal of prohibiting the discharge of toxic pollutants in toxic amounts. This correlates to the RAP's key action item number three which is "to eliminate toxicity of industrial, municipal and other point source discharges."

This essential first step has recently been completed by the development of regulations for establishing Wisconsin's Water Quality Standards and procedures for their implementation.

These water quality standards have just been conditionally approved by the EPA. The Wisconsin DNR has now required that industrial and municipal waste treatment plant permits include biomonitoring and whole effluent toxicity limits, when needed, to eliminate both the acute and chronic toxicity of effluent discharges to State surface waters including the Fox River. Also, rigid standards have been developed which control the discharge of toxic substances to the river based on priority pollutant analysis and the water quality standards as developed and implemented. Industry will continue to be very much involved in the development and implementation of cleanup plans and in cleanup activities of the Remedial Action Plan.

The third item dealt with the economic implications of Lake Michigan/Green Bay pollution for the city of Green Bay and surrounding communities and the economic benefits that our community might realize from a cleaner Green Bay.

Economic Implications

Since the implementation of best practical treatment systems by municipalities and industries on the Fox River starting in 1972, the total suspended solids and BOD loading to the River has been reduced substantially. These efforts along with wasteload allocation limitations for industries and municipalities on the Fox River have insured that the dissolved oxygen content of the river is maintained at 5 ppm of oxygen or greater throughout the entire year. Toxic discharges have likewise been significantly reduced in recent years. These activities have greatly improved the conditions of the river and a very popular sport fishery has developed. Implementation of the Remedial Action Plan will build on the benefits achieved to date.

Incidentally, Fort Howard is a good example of the significant reduction achieved in recent years. Because Fort Howard is a recycler of wastepaper and because PCB's are present in all grades of wastepaper, PCBs are also in our effluent in minute amounts. However, despite increasing our production between 1976 and 1987 we have been able to reduce PCB discharges by over 90 percent to less than 15 pounds per year, or less than 0.5 ppb; a level considered the lowest detectable level by many laboratories. Water samples taken above the DePere dam, about 4 miles upstream of Fort Howard, show that between 800 to 1200 pounds per year of PCBs are coming over the dam with the water. The DNR has recognized that Fort Howard's PCB contribution is not significant as stated in the briefing memo received with our permit renewal. Despite this large reduction and achievement, our efforts to further reduce PCB discharges will continue.

Of economic significance to the Green Bay area is the maintenance of a viable port for loading and unloading ocean and lake vessels. Many commodities enter and leave our port such as pulp, cement, coal, grain, lime, food and other items. Maintenance dredging is required in order to maintain the proper depth of the channel and to maintain the various turning basins. This maintenance dredging removes sediments from the bay and river bottom that are contaminated. Continued dredging to maintain a navigational channel will remove further sedimentation. This effectively removes contaminated sediments.

The Corps of Engineers for the past several years has attempted to expand a Confined Disposal Facility (CDF) in the lower Green Bay harbor identified as Renard Island. This disposal facility would be used to store and contain the dredging materials from the waterway. The International Joint Commission Sediment Subcommittee in an October 1988 draft report listing the options for the remediation of contaminated sediments in the Great Lakes states "... that CDF's, if properly designed and operated, have succeeded in isolating and preventing polluted sediments from re-entering the lakes. In short, technical and environmental feasibility of CDF's have been well established from experience gained over the years."

Ironically, this endorsement of CDF's by the International Joint Commission is at odds with several environmental groups which have led to various disputes and delays over the dredging of the waterway.

The EPA is investigating other sediment remediation methods. There are 42 areas of concern in the Great Lakes and the EPA is working to establish pilot projects at five locations. According to the EPA's current schedule, the pilot projects will be completed and a final report to Congress prepared in fiscal year 1992. This report will include assessments of the significance of the contaminated sediment problem, the technologies that can be used to address the problem, and estimates of the cost of applying these technologies. Green Bay is not one of the selected sites and it is my assumption that the other five sites were either more highly contaminated or presented more ideal conditions for conducting a pilot project.

It is my belief that the implementation of the Remedial Action Plan must be done very carefully for us to achieve maximum impact of the money spent on the cleanup activities. Recent investigations of the toxicity of sediment have been conducted by the EPA Duluth lab using acute bioassay procedures. EPA's Duluth lab has determined that the toxic nature of the leachate from the sediment is due to the presence of ammonia in the sediment rather than the presence of toxic substances such as heavy metals, PCBs, and the like. A significant source of the ammonia might be through the natural decomposition of organic material in this eutrophic system. This, of course, is a preliminary report and must be confirmed, however it illustrates that sufficient knowledge must be available in order to proceed correctly with any remediation plan.

In conclusion, it is my opinion that the Remedial Action Plan prepared by the Wisconsin DNR and accepted by the International Joint Commission for Lower Green Bay and the Fox River is an acceptable plan and one that can be implemented. However, because of the tremendous costs associated with implementation and to better insure success, remediation must be done only after assessing the technical information that is now being developed in order to determine the most effective way for correcting the problems.

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My name is Werner Krause. I am Co-Chairman of the Sheboygan County Water Quality Task Force and wish to thank the Committee for the opportunity to appear here this morning.

The Sheboygan County Water Quality Task Force was formed approximately four years ago at the instigation of Mr. Roy Sebald, an ardent conservationist and member of the Izaak Walton League. Mr. Sebald, in his vision, gathered together a group of leaders representing conservationists, sportsmen, legislators and business people. This group has been responsible for a community river clean-up, obtaining a priority Watershed designation for the Sheboygan River Watershed, numerous public meetings, coordinating the efforts and fostering open communications between various governmental agencies and bodies, and acting as the Citizens' Advisory group for the Remedial Action Plan for the Sheboygan Area of Concern. The funding for our Task Force, approximately $25,000.00 annually, has come from a combination of local contributions and grants from the Wisconsin Coastal Management Council.

The Task Force has focused its attention toward removing the Environmental hold on economic development in the outer harbor and the removal on consumption advisories relative to fish and waterfowl which reside in or frequent the watershed through prompting potentially responsible parties to take positive remedial actions to clean up the contaminated sediments, water column and discharges, the later coming principally from urban and agricultural lands which make up the watershed.

At the present time, the Sheboygan River from the Sheboygan Falls dam downstream contains areas of P.C.B. contaminated sediments which are finding their way into the water column and hence into aquatic organisms, fish and waterfowl.

This situation has resulted in the suspension of the planting of various game fish in the Sheboygan River and the deferral of establishment of an egg-taking station and fish rearing ponds in the area. Sheboygan has been long noted as one of the best Lake Michigan fishing spots as evidenced by the fact that two years ago we had the largest recreational charter fleet of any port in Wisconsin. The current situation could mean the death blow to one of Sheboygan's most viable recreational industries.

The contaminates have also extended into portions of the Sheboygan outer harbor and have resulted in not allowing the much-needed dredging of the shipping channel to allow resumption of full-scale commercial shipping through the Sheboygan Port.

However, within the last month several Federal and State agencies have determined that a major portion of the Sheboygan outer harbor is not severely contaminated and is available for recreational development, i.e. the construction of a marina/small boat harbor of refuge. The economic hold during the last ten plus years has resulted in Sheboygan not being able to take advantage of the now past Federal and State financial aid programs for the development of tourist and recreational facilities.

This last Thursday E.P.A. announced a tentative agreement with one of the P.R.P.s involved in the Sheboygan A.O.C. for a partial remediation of the polluted area, specifically numerous highly contaminated areas in the Sheboygan River that are suspected as a source of the water column problem. This work could be completed as early as this Fall. This announcement came as a complete surprise to the community, particularly since, for the past year the Task Force has been requesting that E.P.A. come into Sheboygan and update us on the status of the Super Fund project.

The Task Force was contacted over a year ago by the Wisconsin Department of Natural Resources to assist it in the preparation of the Sheboygan Area of Concern Remedial Action Plan and to act as the principle Citizens Advisory group. We worked closely with WDNR authors in constructing the first drafts. Our

Technical Advisor attended several inter-agency review meetings where E.P.A. staff was present. We, the Task Force, and WDNR formed a blue-ribbon group from various sectors of the community to review the final draft of the RAP and to write the RAP Summary. Over 2,500 copies of the Summary were distributed throughout the community and numerous public review meetings were held to provide for public input. The Task Force coordinated the availability of numerous copies of the RAP for public review. Throughout this process we, the Task Force, had little contact with E.P.A. and received no funding from them for costs which we incurred.

It is the opinion of the Task Force that, although the Sheboygan RAP is a fine document, it is incomplete and approximately six months premature. This position we have stated publicly and have requested that a copy of our written position be attached to the final Remedial Action Plan. We have taken this position due to the fact that the Super Fund/P.R.P. Remedial Action Feasibility Investigation has not yet been completed and the Priority Watershed Study and analysis will not be completed until the Fall of 1990. These two very important pieces of work will give us the guidance to adopt a plan that is based on recent facts as well as the ability to assess the potential costs to all of the parties concerned.

Throughout the past years, our contact with E.P.A. has been mixed with flashes of brilliance driven by an obvious sense of urgency and open communications, while at other times it seemed to us that E.P.A. considered Sheboygan as an outpost on the dark side of the moon. We, the Community of Sheboygan, would far prefer the former on a consistent basis.

The community's hopes for the future are for a river and lake clean enough to allow the resumption of the stocking of game fish to further enhance our tourist and sport fishing industries, presently estimated by the Sheboygan Chamber of Commerce as a $5 million annual economic impact to the community. Various members of our community are now working to develop a lake front park and marina which has been estimated by the University of Wisconsin-Extension as having an annual economic impact of over $4 million. The Sheboygan River must be dredged to allow for the full potential of commercial water-born traffic of commodities. Presently ships are arriving in Sheboygan only half loaded due to draft restrictions. Sheboygan looks at its sister cities that have undertaken waterfront renewal, such as Racine, and at the resultant economic development in their downtowns to the tune of $100's of millions of dollars; we would like to participate as well. Last, but most importantly, we in Sheboygan want to leave an inheritance to future generations of clean waters which can be enjoyed and appreciated in any way they deem appropriate without the fear of personal injury from pollutants or contaminates.

Thank you for the opportunity to share some of our thoughts and concerns with you this morning.

Werner W. Krause, Co-Chairman
Sheboygan County Water Quality Task Force
March 23, 1989

JOINT TESTIMONY

OF

WENDEL JOHNSON AND GEORGE ROGERS

Regarding:

Progress of the Remedial Action Plan (RAP)

Menominee River (Michigan / Wisconsin)

Given Before The

U.S. Senate Subcommittee on Oversight

of Government Management

at

Green Bay, Wisconsin

May 23, 1989

Good morning. My name is George Rogers. I am a resident of Menominee Michigan, and employed as the Environmental Control Manager at Ansul Fire Protection in Marinette, Wisconsin. With me is Dr. Wendel Johnson, a resident of Marinette, Wisconsin and a professor of Biology at the University of Wisconsin Center in Marinette. Dr. Johnson and I both serve on the Citizens Advisory Committee and the Technical Advisory Committee for the Menominee River Remedial Action Plan. We appreciate this opportunity to inform the subcommittee and Senator Kohl of the progress of the Remedial Action Plan.

The Area of Concern being addressed consists of the Menominee River (which forms the border between Northeastern Wisconsin and Michigan's Upper Peninsula) from the mouth on the west coast of the Bay of Green Bay upstream to the second Scott Paper Dam in Marinette, a distance of approximately 3 miles. The Area of Concern also extends north and south along the Green Bay coastline for a distance of 3 miles. The Area of Concern encompasses the entire river and bay frontage of both Menominee and Marinette. The river frontage in the two cities is mainly commercial, industrial, and residential. The river drainage upstream of the Area of Concern is forested with some agricultural land.

The water quality in the Area of Concern is generally good. Some historical pollution problems with heavy metals such as cadmium and arsenic have been noted in the river water, but this situation has greatly improved with the imposition of the Clean Water Act and it's resultant discharge limitations. Both cities enjoy high quality drinking water taken from a combined intake within the Green Bay portion of the Area of Concern. The fishing in the river and Bay is very good. Several charter fishing businesses have evolved over the last several seasons to pursue trout and salmon on Green Bay. Sportfish in the river include smallmouth bass, largemouth bass, smelt, catfish, trout, and salmon. Every spring the river portion of the Area of Concern supports a major walleye spawning run. The fish caught in the river are safe to eat within limits, although, the Lake Michigan fish consumption advisories for PCB's and other substances apply up to the first Scott Paper Dam. Commercial fishermen operate out of Marinette. Fish habitat in the lower river portion of the Area of Concern is somewhat impaired. Historically, there were extensive wetlands along and at the mouth of the river. These were pretty much filled by the early 20th century, and critically few wetlands remain in the Area of Concern

The community as a whole has expressed some concerns regarding access to the lower river in the Area of Concern and also for deteriorated aesthetics in the same area. This portion of the shoreline is mainly industrial. Access to the Bay portion of the Area of Concern is very good. The Bay shoreline consists of parks, beaches, marinas, boat ramps, restaurants, motels and a state natural area adjacent to Marinette's Red Arrow Park.

Industry in the Area of Concern consists of two papermills, a shipbuilder, transportation warehousing, and manufacturers of fire protection equipment, metal furniture, and specialty chemicals.

The Area of Concern has been identified as such by the International Joint Great Lakes Commission because of in-place sediment contamination generally limited to a 10-12 acre sidewater below the Ansul plant on the Wisconsin side of the river. This area is known as the Turning Basin. Corps of Engineer data show that sediments in the Turning Basin are contaminated with arsenic, cadmium, oil and grease and mercury. River channel sediments are less polluted and the river channel (but not the Turning Basin) is regularly dredged, most recently in 1982. This occurance of contaminants is due to past industrial practices and the unique nature of the Turning Basin as a natural sediment trap.

Remedial Action Plan development began on June 15, 1988 with a public meeting. A draft scope of work was presented and public opinion solicited. Citizens were asked to rank problems and objectives for Plan Development. The primary problem identified by the public was contaminated sediments. The primary objective identified by the public was the protection of our high quality drinking water and the second most important objective identified was to eliminate any impacts of arsenic on the river. In October 1988, a Citizen's Advisory Committee was formed to advise the Wisconsin DNR (the lead agency in this process) on plan formation. The Citizen's Advisory Committee is a very diverse group of 23 Wisconsin and Michigan residents with industrial, environmental, recreational, academic and regulatory interests. We also have some members who are simply interested citizens. In January 1989, the Committee produced a statement of the Desired Future State of the Area of Concern. We have attached a copy to the handout. In October 1988, a Technical Advisory Committee was formed to review the extensive data base available for the river, identify areas where further data is needed, and, eventually, to recommend appropriate remedial measures.

The Technical Advisory Committee consists mostly of Wisconsin DNR and Michigan DNR staff with help from the U.S. Fish and Wildlife Service and other Agencies. Dr. Johnson and I also serve on the Technical Advisory Committee. The Technical Advisory Committee will be gathering additional data on the river this summer. Additional funds for these activities may be required.

The Menominee RAP is a community effort. Despite the diversity of interests on the Committee there has been very little conflict between, for example, environmentalists and industrialists. We are a small community and we are basically all neighbors. This enables us to focus on problems with local perspectives. The plan is scheduled to be published in the fall of 1989, but WDNR has asked USEPA for an extension to July 1990. The Citizens Advisory Committee feels that the original schedule was unrealistic, and supports WDNR's request.

USEPA's involvement on the local level has been minimal to non-existent and we will defer to WDNR spokepersons regarding details of the state-Federal relationship. It is important to note, however, that forty-one of the forty-two Areas of Concern in the Great Lakes are listed because of in-place sediment contamination. Proper solution of the national problem of sediment contamination will not occur until a National Contaminated Sediment Management Program is developed. Also, Remedial Action Plans do not lead to remedial actions without resources and funds. State and local agencies are already stretched to their limits implementing their own environmental programs, many of them mandated by USEPA. Funds and resources should be available from the federal government to develop and conduct the monitoring and remedial actions involved.

The citizens of our communities expect an ecosystem approach to this process, and a river and bay that will be a focus of our developing tourism industry, will provide an edible sport fish population and also maintain and enhance critical ecological systems. We wish to have all of this with a healthy river based economy, including a transportation network capable of handling Great Lakes and even international shipping in an environmentally acceptable manner.

The remedial action plan statement of the "Desired Future State" for the Menominee River and Bay Area should include the following elements:

- a healthy economy consistent with the desired future state and the long term maintenance of the area's natural resource base

- a diverse transportation network which includes a navigable river and harbor and a land based system which minimize adverse environmental impacts

- a sustainable recreation base, for the enhancement of the area's tourism industry including: swimmable waters; adequate public access; enhancement of aesthetics and the scenic beauty of the area; enhancement of water-based recreation facilities; and preservation of attractive and diverse wildlife populations

- water from the river and bay that is drinkable after standard treatment

- a balanced productive fishery, fully edible by all persons

- water and sediment quality that is not detrimental to human health

- planned use of the waterfront for industrial, commercial, residential, recreational and wildlife purposes consistent with the desired future state

- no adverse impacts from other areas of the watershed, bay or region

STATEMENT BEFORE THE UNITED STATES SENATE SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT

by

Lyman F. Wible, Administrator
Division of Environmental Quality
Wisconsin Department of Natural Resources
May 23, 1989

Senator Kohl and Members of the Subcommittee:

I am pleased to have this opportunity to testify before you on the issues which face us as resource managers as we work to eliminate Great Lakes water quality problems. You have asked that I focus my remarks on your areas:

1. Status and Health of Lake Michigan

Lake Michigan is a recovering system. In our lifetimes we have seen this important resource severely impacted by the actions of our society.

- Closed beaches because of bacterial contamination threats to public health
- Tributaries which were nearly devoid of aquatic life because of inadequately treated industrial and municipal wastewaters.
- Harbor and near shore eutrophication caused by uncontrolled phosphorus discharges from sewage treatment plants and industrial discharges, nonpoint sources and sedimentation.
- Intrusion of the alewife, sea lamprey and other exotic species.
- Precipitous decline of both sport and commercial fisheries.

Today many problems have been solved through the federal-state partnership. We have implemented federal and state regulatory, financial assistance, and planning programs to control these types of problems and to prevent their recurrence.

- New treatment facilities providing adequate disinfection and control of sewage overflows have led to reopened beaches.
- Phosphorus removal by municipal and industrial facilities has led to attainment of the IJC phosphorus loading goals. Further phosphorus reductions have been realized through detergent phosphorus restrictions.
- New treatment facilities and innovative control programs, such as the Fox River wasteload allocation, have improved water quality to the point that walleye spawning runs, absent in 1965, now number approximately 100,000 fish.
- Lake perch populations have rebounded to levels found in the 1940's to again provide commercial and recreational benefit.

- Alewife populations appear to be under control.
- Salmon and trout are now present in numbers which provide a tremendous sport fishery.
- Twelve priority watershed projects tributary to Lake Michigan are underway to reduce sedimentation and the nutrient problems caused by nonpoint sources.

Much of the success to date has been through EPA and DNR management of the Federal Clean Water Act requirements. Even with these apparent victories over the grosser, more visual impacts of pollution, we still face the extremely serious, yet more subtle, problem of toxic pollutants. While the water is clean enough for fish and aquatic life to survive, persistent, toxic, substances which bioaccumulate up the food chain prevent or limit human consumption of fish and limit naturally reproducing wildlife and fish populations. Contaminants in the sediments not only provide a continuing source of toxic chemicals to the ecosystem, they also limit disposal alternatives for navigational or remedial dredging programs. Airborne depositions over areas as vast as the Great Lakes become significant sources of pesticides and other toxic contaminants. Rural and urban stormwater run-off continues to cause problems ranging from loss of aquatic habitats through sedimentation to contamination by pesticides, heavy metals and other pollutants. Point source dischargers who have contributed greatly to the existing improvements must continue this commitment to prevent toxicity in their effluents.

These are serious challenges which we must address not only through state and local efforts but also through interstate and international cooperative ventures. We are presently limited in our efforts by shortages of resources to manage both Great Lakes programs and priority inland programs such as groundwater protection, discharge permits, treatment system construction and other surface and groundwater quality programs.

Further, there is only a minimum amount of ecosystem data on the Great Lakes. Because of this there is an incomplete understanding of the physical, chemical and biological interactions and the resultant impacts on toxic pollutants.

To develop a process for lakewide management plans for critical pollutants, the Great Lakes National Program Office initiated the Green Bay Mass Balance study. DNR as well as other state and federal agencies are working closely with EPA to develop sampling protocols, analytical techniques and computer evaluation capabilities in order to understand the fate and movement of PCBs in the Fox River/Green Bay system. Understanding this system is an important element in developing the ultimate management strategy for contaminated sediment. These research efforts and the associated resource commitments are essential elements for the future toxicant control programs for the Great Lakes.

2. EPA's Record on Implementing the Great Lakes Water Quality Agreement and the Lake Michigan Toxic Pollutant Control/Reduction Strategy.

Each year, Wisconsin DNR negotiates work activity commitments with EPA during our planning process. As part of this process we have been requested to develop remedial action plan schedules and lake management plan schedules. I will comment on these scheduling negotiations later.

Additionally, EPA has established several work groups to assist state program development:

a. A sediment management study committee to establish sampling procedures and guidelines, evaluation protocols and remediation alternatives. We support this effort as a first step in development of a National Contaminated Sediment Management Program can than be implemented in the areas of concern if technical and financial support are provided.

b. A surface water integration work group of state and EPA staff from the Great Lakes basin to develop program guidance for consistent implementation of the Great Lakes Water Quality Agreement. This work group was established in 1987. Several meetings have occurred to date to develop procedures for Lakewide Management plans and other guidance materials for all states to use in implementing Great Lakes WQA requirements.

As mentioned earlier, EPA has also initiated the Green Bay Mass Balance study to develop the necessary tools for the states to use in completing lakewide management plans.

3. EPA's Record of Assisting the State of Wisconsin with Remedial Action Plans and Lakewide Management Plans.

I am very proud to state that the Green Bay Remedial Action Plan is the first RAP to have completed the IJC review process. In developing this first completed plan, we learned a great deal. Sound implementable plans cannot be developed overnight. Using an ecosystem approach necessitates the use of a team of resource managers. Building the local ownership in the process requires extensive public information sharing and education followed by opportunities to participate in the planning process. This means that the planning process takes time. Green Bay RAP preparation required two and one-half years. Six staff years of effort went into the plan preparation. These staff were diverted from other resource management activities to work on this project. EPA did provide funds for one and one/half staff years of project employe assistance for this effort. This assistance was critical in terms of supplementing our effort.

Additionally staff support funding for one position was also provided for the Sheboygan RAP which is now nearing completion.

We have also learned from both the Green Bay and Sheboygan RAP that implementation does not come automatically. The staffing demands for implementation coordination and project management are greater than plan preparation demands. Remediation measures have costs not easily borne by either local or state agencies. For example, Green Bay sediment clean-up could cost up to $400 million dollars. If the federal government looks for the states to fund remediation measures alone, the implementation of the Water Quality Agreement will be impossible. The Great Lakes Areas of Concern, for which RAPs are required, have been designated because of complex contamination problems usually related to in-place pollutants such as PCB's, metals or other toxicants in the sediment. The costs for restoration will be high but the benefits to be derived for future generations are for more significant. Restoration cannot be accomplished without a strong federal, state and local agency partnership.

In terms of Lakewide Management Plans for critical pollutants, we believe that the first step is the acquisition of in-lake data. We must first develop this base-line data prior to the initiation of control program plans. Again, resources are needed for these efforts by all the states in the Great Lakes basin.

We anticipate that EPA will provide the necessary coordination among the states and the Canadian governments for these planning efforts.

4. EPA's Record in Requiring Uniform Water Quality Standards

We recently received EPA approval of our water quality standards for toxic pollutants and for antidegradation procedures. EPA participated throughout the process to assist us in developing federally acceptable and technically sound approaches for toxic pollutant controls. As part of our antidegradation rules, we have prohibitions on any increases of 21 bioaccumulating toxicants to not only the Great Lakes but to any tributary to the Great Lakes, unless no reasonable alternatives exist.

Alterative evaluations must include additional treatment, source reduction, conservation measures or other treatment system changes. We believe this provision is an important step in the "virtual elimination of toxic substances in toxic amounts".

We also are very encouraged by the proposed initiative which EPA presented at the April meeting of the Great Lakes Environmental Administrators. This is the key to consistency between states and the first step for initiating similar efforts with Canada.

In summary, Wisconsin DNR and EPA must continue an effective partnership to achieve the goals of the Great Lakes Water Quality Agreement. To this end, appropriations under the Clean Water Act of 1987 must reflect the additional work responsibilities related to the Great Lakes commitments. Resources cannot be shifted from the same types of problems which exist in inland waters and for which Clean Water Act responsibilities for permitting enforcement monitoring, etc. also exist. We are committed to work with the federal government and neighboring states to ensure the long term protection of the Great Lakes resources.

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ATTACHMENT 1

Remedial Action Plans Status
As of May 23, 1989

1. Green Bay - Complete, implementation underway.
2. Sheboygan - to be completed summer of 1989.
3. Marinette - Shared with Michigan, fall of 1990 to acquire additional sediment data.
4. Milwaukee - Initiated, to be completed fall of 1991.
5. Duluth-Superior - Shared with Minnesota, anticipated to be completed summer of 1991.

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Remarks of Thomas D. Cuene, Brown County Executive before the U.S. Senate Subcommittee on Oversight of Government Management held at Green Bay, Wisconsin, May 23, 1989

On behalf of the Brown County Community, I would like to welcome Senator Kohl and to thank him for selecting Green Bay as the site for this hearing. I feel it is appropriate that this be held in Green Bay as the people of our community have shown a rekindled interest in reclaiming our water resources. We are now all beginning to recognize the potential benefits from a restored and enhanced Green Bay and Fox River ecosystem.

I would like to take a few moments to dwell upon the importance that water has, and will continue to play, in our community. Green Bay came into being at this location largely as a result of its water resources. The Fox River and lower Green Bay and with them, access to Lake Michigan and points beyond, have shaped the development of Brown County as well as the entire Fox River Valley.

The paper industry was originally attracted to this area by our water resources. In the early stages of development, water served as the principal mode of transportation, a major source of power, and a key element in the processing of wood pulp into paper. Today, water remains essential for the manufacturing processes of many of our industries. The Port of Green Bay continues to serve as an important element in the transportation infrastructure of Brown County, being used for shipment of food, coal, pulp, and other bulk commodities.

We are, however, a community in transition. New industries are moving into Brown County which are totally unrelated to water as a means for manufacturing. People are no longer looking at the Fox River as solely for industrial development. I do not wish to imply that the area's major economic base does not remain water related, but clearly, the role of this resource is changing and will continue to change dramatically in the future.

We now consider our water resources as extremely valuable assets that need to be properly cared for and used to strengthen our community as a good place to live and work. Brown County is in competition with many other areas for jobs and business. It has also become apparent that, in this competition, our deciding edge could well be our quality of life, which is tied directly to our water resources.

We are starting to look toward our water frontage as an opportunity for social and economic advancements, which in turn, will add greatly to our quality of life. This quality of life is best described as the number of amenities a community offers its residents. These include low crime rates, good transportation, education, cultural and recreational offerings, and an abundance of good, clean water for drinking, fishing, swimming, and boating. My feeling is, that in terms of attracting new businesses and people to our community, quality of life will be equally as important as a good business climate. It is also quite clear that any plan to improve our community cannot and will not overcome poor and/or offensive water quality. The look, smell, and quantity of our riparian resource will ultimately determine our future success or failure.

With those thoughts in mind, I would like to take a few moments to review action already taken in caring for and rehabilitating our water.

As a result of the Great Lakes Water Quality Agreement, the United States and Canada decided to address the environmental problems of the Great Lakes by identifying 42 areas of concern and developing remedial action plans to address their problems.

Slightly over three years ago a group of concerned area citizens, state and local officials, and the scientific community got together to work on a comprehensive plan to identify and address the problems of the Fox and Wolf River basin.

They approached their problem from an ecosystem perspective, the basis of which was established through an EPA workshop held in Green Bay prior to RAP development. They built upon the successes we had experienced in water quality improvement over the past decade. The EPA also provided a small amount of funding, requested by the Wisconsin Department of Natural Resources, for staff support to help write this plan. The result of this effort was culminated with the February, 1988 signing of the Lower Green Bay Fox River Remedial Action Plan.

To me, the people of Brown County were being offered an incredible opportunity. It showed the need for the citizens of our community to develop a common commitment toward the environment in which we live and raise our families. The plan pointed out numerous benefits from its implementation, all of which are closely intertwined. Some such as swimming and fishing are more visible than others. However, without the less visible effects of reducing the pollution loads and toxic contaminants, fishing and swimming will not become a reality.

Coupled with these benefits, the plan also presented us with a formidable challenge. Quite simply stated, that challenge is implementation. At the onset, we realized that Brown County, by itself, would not be able to implement the recommendations of the plan. Brown County is at the end of the drainage basin which encompasses all or portions of twenty counties, home to over one million people living in hundreds of towns, cities, and villages. The basin also contains forty watersheds with over 120 industrial dischargers and some sixty municipal treatment plants.

It became apparent early on that for implementation to become a reality, all governmental entities, industries, and residents would have to work together. This requires massive educational efforts, as well as cooperation and coordination on all levels.

In addition, the plan carries a hefty price tag. To be totally successful will require hundreds of millions of dollars. I find it difficult to expect the total cost to be borne by those living with the Fox-Wolf River basin. I would hope to see some fair and equitable cost-sharing proposals formulated that would divide these costs among the local communities, industries, ~~state,~~ and federal governments.

Currently we are trying to accomplish these objectives using a volunteer committee which has no funding and no regulatory authority. At best, we try to keep public awareness of the RAP high and encourage others in the areas of pollution abatement and water quality improvement. For the plan to reach fruition, we need more than the dedicated band of volunteers. As I mentioned before, we need cooperative, coordinated commitments from all levels of government and the development of a governmental regulatory authority charged with the plan's implementation.

In addition to local and state resources, we need the EPA to play a bigger role. We desperately need direction on the federal level in dealing with in-place pollutants. I would like to see continuation of the Assessment and Remediation of Contaminated Sediments Program of the 1987 Water Quality Act. This would assist in developing technology and building local support for clean up projects.

Currently no program exists to remediate contaminated sediment problems common to most of the 42 identified areas of concern on the Great Lakes. This has been one of the largest areas of local concern and controversy as Brown County tries to deal with disposal of its contaminated bottom muds from its harbor's maintenance dredging program. Without federal support and direction, it is unlikely that the county or the states can handle this serious and enormous problem. I would personally like to see a federal/state partnership formed in creating an in-place pollutant clean up program. I believe a program similar to the Superfund, where costs would be recouped from culpable parties, could work.

In addition to a commitment from the EPA, we also need funding. As a local government official, I can appreciate all of the demands being placed upon Washington. But I can also appreciate the fact that if we don't start adequate funding of remedial actions on environmental issues, those other demands will become moot.

Solutions to these problems will affect both private and public concerns. Those solutions will be expensive, sometimes controversial, and in many cases, long term. However, I believe the end result to be worth the time, money, and effort necessary to achieve them.

In closing, I'd like to say that I'm personally excited by the prospects a clean river and lower bay holds for Brown County. My enthusiasm is shared by many and we all are committed to doing our part. I hope our enthusiasm and commitment will be shared by those at the state and federal levels. By working together, we can and will, make it happen. By doing so we will all enjoy the benefits of a cleaner and healthier environment.

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Citizens
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A
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STATEMENT OF SUSAN MUDD, STATE DIRECTOR
CITIZENS FOR A BETTER ENVIRONMENT

BEFORE THE
SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT
COMMITTEE ON GOVERNMENTAL AFFAIRS
U.S. SENATE

May 23, 1989

Introduction

Thank you Senator Kohl for taking the leadership on the issue of EPA's implementation of the Great Lakes Water Quality Agreement of 1978 (GLWQA). I appreciate this opportunity to testify on behalf of Citizens for a Better Environment ("CBE") regarding the need for EPA efforts to protect and restore water quality in the Great Lakes. I am an attorney on staff of the CBE and director of CBE's Wisconsin offices, located in Milwaukee, Green Bay and Madison, Wisconsin. CBE is a midwestern non-profit environmental research, advocacy and educational organization with over 30,000 members in Wisconsin, Illinois, Indiana and Minnesota.

Since the early 1980's CBE has worked on the problem of toxic pollution of the Great Lakes ecosystem. Our focus is reducing human exposure to toxics in all media (air, water, land and food) so as to protect human health. You have invited me today to address three related issues:

(1) the status and health of Lake Michigan, Milwaukee Harbor, and related tributaries;

(2) EPA's record in assisting the Milwaukee community to develop and implement a Remedial Action Plan (RAP) for the Milwaukee Harbor and Milwaukee Estuary, which are a designated Area of Concern on Wisconsin's Lake Michigan shoreline, and the current status of that RAP; and

(3) what actions should be taken next to improve the health of the Great Lakes waters surrounding Milwaukee?

I will address each of these questions separately.

Lake Michigan and Milwaukee Harbor Water Quality Problems

The Great Lakes Water Quality Agreement has led to some improvements in the water quality of Lake Michigan. Its implementation has meant reductions in a number of the conventional pollutants entering the ecosystem through water discharges. This has been accomplished through phosphate bans, phosphorus removal at sewage treatment plants and modest pretreatment programs aimed at a few metals. Due to the efforts at reducing sources of eutrophication, our lakes look cleaner.

Similarly, visible air pollutants have been diminished through controls on sulfur dioxide, particulates and a handful of other contaminants. Therefore, until the last two summers when ozone advisories and an alert made us take notice, people here were being told that we had dealt with the smog problem. Many have been thus lulled into a sense of security that we are no longer threatened by our air or water quality.

But the problems of pollution to Lake Michigan are much greater.

Milwaukee's harbor has not improved as much as many other lakes; a variance still in place allows there to be so little oxygen in our water that, even if the toxins were removed, many fish species could not survive there. Sediments in Milwaukee's waterways store dangerous levels ~~of~~ PCBs, PAHs, heavy metals, and pesticides. The Milwaukee River produced a snapping turtle with PCB levels of 72 ppm, over 7 times the EPA highly contaminated standard of 10ppm, over 70 times the FDA limit of 1 ppm. Milwaukee's confined disposal facility now receives dredge spoils from the very waters that the International Joint Commission has designated one of the worst toxic hot spots in the Great Lakes Basin. Furthermore, public access to this facility is not restricted; children can be seen using the sediments as if they were sand, anglers fish within the facility. Migratory birds use the facility enroute to southern regions and South America, carrying toxics on their feet.

Milwaukee has the dubious honor of being home to the single largest pollution source to Lake Michigan, the Milwaukee Metropolitan Sewerage District. In addition, runoff from coal, salt and scrap metal piles dump arsenic, cadmium, lead and other heavy metals into the harbor. Nonpoint source pollution remains the largest pollution source to Lake Michigan tributaries (Milwaukee, Kinnickinnic and Menomonee rivers)in the Milwaukee area.

The current threat to this great lake's health, and to that of its residents, are the invisible toxic pollutants, those persistent, bioaccumulative toxins now integrally mixed in our water, air and food chain. The GLWQA recognized this when it committed the U.S. and Canada to "eliminate to the maximum extent practicable the discharge of pollutants into the Great Lakes System." The Agreement further set as a goal the "virtual elimination" of discharges of persistent toxic substances into the Lakes and provides that "(t)he philosophy adopted for control of inputs of persistent toxics substances shall be zero discharge."

Last month the International Joint Commission released its fourth Biennial Report to the governments of the United States and Canada on progress in accomplishing the goals of the Agreement. The IJC newsletter, Focus summarized the findings as follows: "Although considerable progress has been made and a shift of emphasis to controlling inputs of toxic chemicals is evident, the Commission concludes in its report that the goal of "virtual elimination" of inputs of persistent toxic substances into the Great Lakes remains an unmet challenge. Many locations in the Great Lakes ecosystem do not meet the Agreement's General and Specific Objectives." Milwaukee's harbor and rivers are among them.

The evidence is mounting of the problems these toxins are causing. The National Research Council and the Canadian Royal Academy of Sciences found "substantial evidence that the human population living in the Great Lakes basin is exposed to, and accumulates, appreciably more toxic chemical burden than people living in similarly large regions of North American for which data are available." *The Great Lakes Water Quality Agreement: An Evolving Instrument for Ecosystem Management* 58 (1985).

Studies of pregnant women eating about 4 fish meals of Great Lakes fish monthly have found we are now bearing children with lower birth weights, smaller head circumferences, more developmental and neurobehavioral disabilities, and greater numbers and types of infectious illnesses suffered than among infants born to women who had consumed no Great Lakes fish. (B.J.Smith, PCB levels in human fluids:Sheboygan case study. Madison: Univ.of Wis. Sea Grant Institute, 1984),(G.G.Fein, J.L.Jacobson, S.W. Jacobson, P.M.Schwartz, J.K.Dowler, Prenatal exposure to polychlorinated biphenyls:effects on birth size and gestational age. *Journal of Pediatrics* 1984;105:315-320), (J.L. Jacobson, S.W. Jacobson, P.M.Schwartz, G.G.Fein, J.K.Dowler, Prenatal exposure to an environmental toxin:a test of the multiple effects model. *Developmental Psychology* 1984;20:520-532.)

And across the basin, advisories are now in effect warning us to not eat many species of sport fish regularly. In Wisconsin the latest advisory, issued in April, lists 180 lakes, rivers and stream segments where certain fish should not be eaten due to PCB, pesticide or mercury contamination. Attached is a copy of the page of the latest advisory listing Lake Michigan and the Milwaukee River (including the entire Estuary area). It advises that no one eat nine different types of fish, including large sport fish such as lake trout, chinook salmon and brown trout.

Wisconsin also has in effect a waterfowl consumption advisory for mallards, lesser scaups (bluebills) and black ducks usually hunted along the Lake Michigan shoreline. Issued in 1987, this was the first waterfowl advisory in the nation.

The contamination of Milwaukee and other major harbors, and the fish and waterfowl consumption advisories are symptoms of the now routine harmful practices of using and disposing of toxins. The sources of these pollutants to Lake Michigan include: 1) industrial and municipal wastewater and stormwater discharges; 2) airborne deposition; 3) rural and urban non-point runoff; 4) contaminated groundwater; and 5) inplace pollutants (contaminated sediments in rivers and harbors).

To date U.S.EPA and state governments such as Wisconsin's, have focussed their efforts on the first category, point sources. Yet even in this area the efforts have been totally inadequate. Last year, after eight years of urging by environmental groups, capped by a federal lawsuit, and more recently threats by EPA, Wisconsin adopted a series of rules aimed at limiting discharges of toxic pollutants into this state's waters. Those rules however, fall far short of meeting either the standards or the intent of the GLWQA. Environmentalists pointed out many shortcomings of the rules: the use of mixing zones (given a new name in these rules of "zones of initial dilution" or ZIDs), the reliance on dilution, and the absence of any certainty of even a freeze on discharges of toxics at current levels. Yet just last week the EPA approved the rules almost without change.

One of the inadequacies in the rules that both environmentalists and the U.S. Fish and Wildlife Service had noted was the aroclor specific treatment of PCB's. Although all of the regulated mixtures probably contain the most toxic congeners, there is an 80-fold difference in their regulation, and only two mixtures (1254 and 1260) were considered human carcinogens. In the technical justification for its decision and a separate Response to Public Comments, EPA discussed at length why and how Wisconsin's decision was flawed. "In conclusion the state adopted Aroclor-specific criteria for regulating point source discharges of PCBs through the Wisconsin Pollution Discharge Elimination System as implemented through NR 105 are not, in the opinion of U.S.EPA, supported by the scientific and technical information." Thus EPA had the grounds and justification to disapprove the rule. Instead however, it conditionally approved the rule (NR 105) and gave Wisconsin DNR a full year to revise the PCB aroclor-specific treatment. EPA's desire to not act was more fully understood by its silence on what action the state should take on permits of companies discharging PCB's being revised in that year. This gap virtually assures that the discharges will continue unabated.

Another inadequacy of Wisconsin's water toxic rules pointed out over a year ago by environmentalists is its use of dilution and zones of initial dilution instead of adequate treatment or toxic use reduction. The Great Lakes Water Quality Agreement clearly states that mixing zones shall not be used as a means of dealing with pollutants.

The entire philosophy of dilution is based on limiting harmful concentrations of certain conventional pollutants. Yet this ignores the real problem for the Great Lakes ecosystem, that of the total loading of toxins. Further, these uses of dilution as means of lessening the concentrations of persistent bioaccumulative toxins are clearly inconsistent with the Agreement. They are also in direct contrast with the virtual elimination goal stated in the Agreement.

EPA's response to this concern for the use of ZIDs was "implementation of this aspect of the GLWQA goes beyond current U.S. EPA guidance under the Clean Water Act." This is the crux of the problem now in Region 5 and its states' approach to the Great Lakes; they are relying on past guidance instead of on the GLWQA and EPA's mandate under section 118 of the Clean Water Act to implement the Agreement.

EPA has thus acknowledged, at least with its comments on ZIDs, that its current guidance falls short of what is necessary to implement the Agreement. Although we believe that the agency has all the authority it needs to carry out the Agreement through the U.S. being a signatory and the Clean Water Act's mandate to EPA to implement it, we are supportive of any EPA efforts to strengthen and clarify this ability. We stand ready and willing to help with such efforts.

Unfortunately in this regard, EPA's actions approving Wisconsin's rules contained another apparent setback on such an initiative. Negotiations conducted on settlement of our lawsuit and on avoidance of further lawsuits on the Wisconsin rules included a process to develop a Great Lakes Initiative, in which the EPA was to write guidance applicable to all of Region V. The guidance was to have finally implemented the GLWQA through creating guidance with a specific subchapter applicable to the Great Lakes. The guidance was to have included resolution of at least a dozen issues including development of uniform water quality standards for the Great Lakes. However, EPA's final response on the rules made no reference to this commitment.

CBE and other environmental organizations eagerly await the initiation of new guidance from and for the Region to implement the Agreement. Unfortunately, we can not be confident about the ability of the current proposal to clean up the Great Lakes. As now envisioned, only state and EPA bureaucrats will be represented on the steering committee which is to make all the decisions on the content of the guidance. The chair of a separate public participation group will be allowed to only observe steering committee meetings. This restrictive approach to public participation ignores the public's right to be part of the decisions about the resource. Further it ignores the contributions that have been and could be made by citizens and citizen organizations, including the function of having broader viewpoints included and more people aware of the process and desired results.

While EPA has been stating that their and our objectives are the same, to restore and protect the lakes, such statements are not sufficient. It is clear that the states need to be pushed into compliance with the Agreement. We are concerned that, in an attempt to have consensus with states, EPA already removed the specific list of issues to be dealt with, including mixing zones, dilution, level of risk, assumed fish consumption rates, pollution prevention and variances. If EPA equivocates on even stating what issues are to be addressed in guidance to accommodate the states, we are concerned about the content of the ultimate product. For guidance will be inadequate if it merely addresses the issues without setting a firm timetable for clean up of the Great Lakes. It will also be useless if it lacks a clear directive to states to not use this process as a means to delay ongoing triennial reviews (already suggested in Michigan).

EPA's role in developing the RAP for Milwaukee Harbor

Three years ago, in a letter to GLNPO, the Wisconsin DNR promised to complete the RAP for Milwaukee's Harbor in FY 1987. As recently as February of this year, the DNR promised to finish it by January 1991. To date, the RAP has not been started. In the intervening years DNR has been using the lack of EPA funding as an excuse for its lack of progress. Funds from EPA have been diverted to RAP work for Sheboygan, Green Bay and possibly elsewhere. Saying it lacks the positions necessary to do the work, DNR has not started Milwaukee's RAP.

We were pleased to hear today's announcement of EPA approval of funding for a position in the Milwaukee office of Wisconsin DNR to write the Milwaukee RAP. Perhaps we can now finally begin the process of planning for the future clean-up of our harbor. With one position funded by EPA, DNR will need to committ other resources for the work to be done adequately and in any semblance of a timely fashion.

It is hard to know who's to blame, but there is no progress on cleaning up the contamination that is Milwaukee's Harbor and Estuary, nor education of those who subsist on its fish as to the dangers they are under. It is very clear that the EPA has not helped progress here in Milwaukee. In fact, recently EPA Region V officials told Lake Michigan environmentalists that EPA does not intend to take an active role in the RAP process and will only comment after the process is complete. It is also painfully obvious by now that the DNR has used any and all excuses, whether disagreements with EPA Region V over the steps necessary to complete a RAP for Milwaukee, or lack of funds thought necessary to carry out the work, to not undertake the RAP. Thus by now it should be clear that EPA needs to take decisive actions to force Wisconsin to make the RAP a reality.

Actions Needed to Improve the Health of the Great Lakes waters

Action is needed to address all of the sources of toxics to the Great Lakes ecosystem. On one source type in particular federal action is extremely overdue, airborne toxics. In the eighteen years since enactment of the Clean Air Act, the EPA has managed to regulate only eight toxic air pollutants. Estimates are that 50 to 90 percent of the toxins entering Lake Michigan are from airborne sources. Recently released Community Right To Know information has for the first time given us a concept of the magnitude of those emissions. In Wisconsin some 46.5 million pounds of toxins were emitted into the air in 1987 alone. Milwaukee County alone had emissions of over one million pounds of air toxics in that year. These figures do not even include toxins not on the section 313 list, nor sources emitting less than 75,000 pounds, nor automobiles.

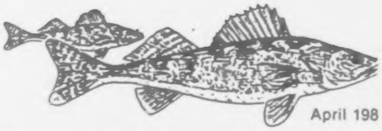
In the last eighteen years, while EPA chose to take no action, Wisconsin and 25 other states have decided to limit certain air toxic emissions. The process in Wisconsin has been long, painful and at this point faces an uncertain outcome. The DNR spent eight years developing, negotiating and compromising a rule package to limit the emissions of some 400 toxic pollutants. As a participant in the process, CBE is very disappointed in the results and the lack of adequate EPA resources devoted to making it successful. Although industries were included in the entire process and innumerable concessions were made to accommodate their interests, their trade groups sued before the rules went into effect, seeking to invalidate them. Knowing that the rules are not strong but aware that the alternative of relying on EPA for standards was nonexistent, CBE and other environmental and citizen groups intervened to protect the rules. To date we have been successful in having them upheld, but an injunction is now in effect meaning that companies are not even required to plan how they would comply with the limits.

Regardless of the outcome of the lawsuit over Wisconsin's rules, federal leadership and action are needed on air toxics. Even if Wisconsin's rules were in effect today, Lake Michigan would be accumulating airborne deposition from Wisconsin sources and elswhere. Additionally, without federal support and action, states may adopt inconsistent limits. Businesses will use any discrepancies, as they have in Wisconsin, to claim that being in a particular state puts them at a competitive disadvantage and use this as a threat to leave. This sort of discussion inevitably makes state decision-makers wary and always leads them to make concessions to business interests not in the interest of protecting the health and welfare of their citizens.

Conclusion

To date EPA has failed to implement the Agreement, especially in the realm of toxins. It has failed on a source by source basis as I have discussed in the areas of point sources of air and water toxins. But even more important from the perspective of the Great Lakes and all of their residents, it has failed by not developing a multi-media, multi-source approach to the problem. The EPA, to carry out the Agreement, should be mandating a toxics freeze, to prevent increased loadings of the most dangerous pollutants. EPA must then develop and force implementation of an aggressive phased reduction of those toxic loadings. Toxic use reduction strategies, now proven in numerous industrial settings but not enacted by many companies, need to be mandated. Until EPA takes these steps citizens of Wisconsin, and all other Great Lakes states and provinces, have only the words of the Agreement but the reality of contaminated harbors, fish and waterfowl, damaged fishing industries and the potential for permanent harm to other industries (including tourism, forestry and agriculture) to contend with. Our quality of life, future ability to breathe our air, drink our water and eat our fish now rest on EPA's willingness to act.

Health advisory for people who eat sport fish from Wisconsin waters



April 198

This publication explains which sport fish species in Wisconsin lakes and rivers do not meet health standards for a number of toxic pollutants. It describes health precautions you should consider before you decide to eat fish you've caught from waters where contaminants pose a problem.

It's important to note that this guide features two different sets of health advice: one for fish contaminated with PCBs and pesticides (pages 1, 2 and 3), and another for fish contaminated with mercury (pages 3 through 7). Generally, people who should take the most precautions are children aged 18 or less, women who intend to have children, and women who are pregnant or breastfeeding.

PCB and pesticide contamination in fish

	Group 1 These fish pose the lowest health risk.	**Group 2** Women and children should not eat these fish.	**Group 3** No one should eat these fish.
	See page 3 for specific health advice on each group of fish.		
LAKE MICHIGAN	Lake trout up to 20" Coho salmon up to 26" Chinook salmon up to 21" Brook trout Rainbow trout Pink salmon Smelt Perch	Lake trout 20 to 23" Coho salmon over 26" Chinook salmon 21 to 32" Brown trout up to 23"	Lake trout over 23"* Chinook salmon 32 to 35" Chinook salmon over 35"* Brown trout over 23" Carp Catfish
GREEN BAY south of Marinette and its tributaries (except the Lower Fox River), including the **Menominee, Oconto, and Peshtigo Rivers**, from their mouths up to the first dam	Rainbow trout up to 22" Chinook salmon up to 25" Brook trout up to 15" Smallmouth bass Northern pike up to 28" Perch Walleye up to 20" Brown trout up to 12" Bullhead *White sucker*	Splake up to 16"	Rainbow trout over 22" Chinook salmon over 25" Brown trout over 12" Brook trout over 15" Carp* Splake over 16" Northern pike over 28" Walleye over 20"* White bass
LOWER FOX RIVER from its mouth at Green Bay up to the DePere Dam		Northern pike *White sucker*	White bass* Walleye Carp* Drum* Channel catfish*
LOWER FOX RIVER from the DePere Dam up to the Neenah-Menasha Dam	White bass Walleye up to 15" Northern pike Perch White sucker	Walleyes over 15" Bullheads	Carp over 17"
EAST AND WEST TWIN RIVERS from their mouths up to the first dam	Perch Northern pike Crappie Smallmouth bass NOTE: Follow Lake Michigan advisory above for trout and salmon		Carp Catfish*
MANITOWOC RIVER from its mouth up to the first dam	NOTE: Follow Lake Michigan advisory above for trout and salmon.		Catfish*
SHEBOYGAN RIVER in Sheboygan County from the dam at Sheboygan Falls to the Coast Guard station in the City of Sheboygan, including **Greendale and Weedens Creeks**	Coho salmon up to 26" Chinook salmon up to 21"	Rainbow trout Brook trout Coho salmon over 26" Chinook salmon 21 to 32"	*Bluegill* *Crappie* Rock bass* Carp* Smallmouth bass* Walleye* Northern pike* Brown trout Catfish* Chinook salmon 32 to 35" Chinook salmon over 35"*
MILWAUKEE RIVER in Milwaukee County (includes **Milwaukee Harbor**) from its mouth up to the North Avenue dam, including the **Kinnickinnic and Menomonee Rivers**	Perch NOTE: Follow Lake Michigan advisory above for trout and salmon.		Crappie Northern pike Carp* Redhorse Smallmouth bass

Wisconsin Department of Natural Resources • Wisconsin Division of Health PUBL-IE-019 89REV

HEALTH ADVICE for the charts on pages 1 & 2	
GROUP 1:	**Contaminant levels in 10 percent or less of tested Group 1 fish are higher than one or more health standards. EATING GROUP 1 FISH POSES THE LOWEST HEALTH RISK. Trim fat and skin from Group 1 fish before cooking and eating them.**
GROUP 2:	**Contaminant levels in more than 10 percent but less than 50 percent of tested Group 2 fish are higher than one or more health standards. CHILDREN UNDER 15, NURSING MOTHERS, PREGNANT WOMEN, AND WOMEN WHO INTEND TO HAVE CHILDREN SHOULD NOT EAT GROUP 2 FISH. You should also limit your overall consumption of other Group 2 fish, and trim skin and fat from these fish before cooking and eating them. (NOTE: See specific health advice for mercury-contaminated fish in the Petenwell Flowage and Lake Superior elsewhere in this publication.**
GROUP 3:	**Contaminant levels in 50 percent or more of tested Group 3 fish are higher than one or more health standards. NO ONE SHOULD EAT GROUP 3 FISH.** ***Ninety percent or more of Group 3 fish marked with an asterisk (*) contain contaminant levels higher than one or more health standards.**

**U.S. Food & Drug Administration
and Wisconsin Division of
Health Standards for
Contaminants Commonly
Found in Sport Fish**

PCBs	2 parts per million (ppm)
DDT	5 ppm
Toxaphene	5 ppm
Chlordane	0.3 ppm
Dieldrin	0.3 ppm
Mercury	0.5 ppm
Dioxin	50 parts per trillion

SOURCE: Wisconsin Division of Health
and Wisconsin Department of
Natural Resources
April 1989

MERCURY CONTAMINATION IN FISH

HOW TO USE THE MERCURY ADVISORY

1. Measure each fish you catch from the tip of its nose to the end of its tail.
2. Look at the list of lakes that begins below, which names all Wisconsin waters that are subject to a health advisory for mercury in fish. See if the lake you caught your fish from is on the list. If it isn't, then DNR hasn't tested fish in your lake, or tested fish meet health standards. (Data on tested lakes is available from water resources staff specialists in DNR district offices.)
3. If your lake *is* on the list, check to see what health advice corresponds to the mercury content of the fish you caught. Do this by finding the number — either 1, 2, 3, or 4 or the symbol "*" — in the list that corresponds to the size and species of your fish and the lake and county in which you caught it. Match that number to the group number below (GROUP 1, GROUP 2, etc.) to find out whether you should eat the fish you caught and how often.

HEALTH ADVICE FOR MERCURY CONTAMINATED FISH

GROUP 1: **Pregnant women should eat no more than one meal a month of Group 1 fish.** *Everyone else may eat unlimited amounts of Group 1 fish.* Skin-on fillet samples average 0.5 ppm mercury or less.

GROUP 2: **Pregnant or breastfeeding women, women who plan to have children, and children under 18 should not eat Group 2 fish.** *Everyone else should eat no more than 26 meals of Group 2 fish a year. Eat no more than 13 of these 26 meals in any one month. Space the remaining 13 meals over the rest of the year at the rate of one or two meals a month.* Skin-on fillet samples average 0.5 to 0.75 ppm mercury.

GROUP 3: **Pregnant or breastfeeding women, women who plan to have children, and children under 18 should not eat Group 3 fish.** *Everyone else should eat no more than 13 meals of Group 3 fish a year. Eat no more than 7 of these 13 meals in any one month, and space the remaining 6 meals over the rest of the year at a rate of one meal a month.* Skin-on fillet samples contain an average of 0.75 to 1.0 ppm mercury.

GROUP 4: NO ONE SHOULD EAT GROUP 4 FISH. Skin-on fillet samples contain an average mercury level above 1.0 ppm.

* : This symbol means not enough information on a particular size and species of fish was available to issue health advice.

County/Water	Fish Species	Fish Length (in inches)							
		<10"	10-12	12-15	15-18	18-22	22-26	26-30	>30
Lake Superior	Walleye	1	1	1	1	3	3	4	*
ADAMS CO.									
Wisconsin R. below Petenwell Dam to Castle Rock Dam (Castle Rock Flowage) See Juneau, Lincoln, and Wood Counties also.	Walleye	1	1	1	2	2	3	*	*
Wisconsin R. from Nekoosa Dam to Petenwell Dam (Petenwell Flowage) See Juneau, Lincoln, and Wood Counties also.	Walleye	1	1	1	1	2	*	*	*
ASHLAND CO.									
Bear Lake	Walleye	1	1	1	2	3	*	*	*
Day Lake	Musky	*	*	*	*	*	*	*	2
Mineral Lake	LM Bass	*	*	2	*	*	*	*	*
Lake Three	LM Bass	1	1	1	2	*	*	*	*
Spillerberg Lake	Y Perch	2	*	*	*	*	*	*	*
	Musky	*	*	*	*	*	*	*	3

NOTE: Italicized information indicates new additions or adjustments to advisory since last advisory was issued in October 1988

LM Bass = Largemouth bass, SM Bass = Smallmouth bass, N Pike = Northern pike, Y Perch = Yellow perch
BL Crappie = Black crappie, CH Catfish = Channel catfish, W Sucker = White sucker

Dr. James Ludwig

Testimony for the United States Senate Committee on Governmental Affairs

The Subcommittee on oversight of Government Management.
Chairman, Carl Levin
Member, Herb ~~Kole~~ Kohl

Senator ~~Kole~~ Kohl, Chairman Levin, other members of the the sub-committee and interested parties, I wish to thank you for the May 15th invitation to appear before your Committee in Milwaukee to discuss the status and health of Lake Michigan and Milwaukee Harbor.

My particular interest in the resources of Lake Michigan lies in management that the government brings to improve the health and welfare of wildlife populations existing in the Lake Michigan and the entire Great Lakes basin. Currently, Lake Michigan is a highly contaminated ecosystem. The major sources of contamination are concentrated in the southern and western sides of the Lake Michigan basin. Even so, the wildlife resources concentrated in the north end of the basin have recently exhibited profound reproductive damage from chlorinated contaminants.

With respect to the questions that you have posed concerning Milwaukee Harbor and Estuary in your letter, I can make few comments on the local Milwaukee situation in any context since I have had no field experience here, and am ignorant of point sources, sediment contamination levels, wildlife responses, etc. in the Milwaukee estuary. However, as far as Lake Michigan is concerned, I believe that I can offer a great deal of first-hand information. I can tell you that even in the cleanest, most remote, parts of Lake Michigan, there is a serious contamination problem, particularly with respect to PCBs. There are indications that **total** PCB contamination has declined, while the **actual toxicity** expressed by the residual contaminants has increased. That is, we are seeing more health-effects related responses in the wildlife now than we did 10 years ago from PCB contamination. The reasons for this are many and complex. They include the fact that the lakes themselves sort contaminants, retaining the most toxic of PCB, dioxin, and furan congeners, while tending to break down sediment or out-gas those congeners that are of less significance toxicologically. Further, as the wildlife species accumulate mixtures of these contaminants, they tend to select out for retention and metabolism those contaminants that are more highly toxic. For example, a recent study completed in Green Bay found approximately 9 times as much of the most toxic PCB congener, a pentachlorophenol not chlorinated in the ortho positions (3,4,5,3',4' PeCB), than was predicted on the basis of the local source material - Aroclor 1242 - that was added to this compartment of the greater ecosystem of Lake Michigan largely by paper mills recycling PCB-laden papers in the Fox River basin. Similarly, we see toxicity ranging in cormorant and tern eggs from colonies in Lake Michigan 6-8 times above what is predicted on the basis of the original Aroclor mixtures dumped into these systems. These data are not reassuring. The toxic contamination of Lake Michigan is so severe that the problem will be with us for decades regardless of what we do, especially since the water and wildlife tend to sort out and retain the most toxic of these contaminant mixtures.

A central theme running through the questions you have posed for me is whether or not it is technically possible to reduce the existing levels of pollution and restore the health of the ecosystem. I am convinced that it is: However, I am equally convinced that it is essential that we act on several levels simultaneously. First, we must contain and remove from the water column those contaminated sediments where these highly toxic materials are present since the sediments are now sources. In that regard, we must not be so foolish as to continue to put contaminated sediments into confined disposal facilities (CDFs) that discharge back into the waters of the Great Lakes. The exercise of building CDFs around the Great Lakes basin has been one of great frustration to builders, agency staffs, and the public. In my view, we have succeeded principally in stirring up the sediments, resuspending the worst toxic congeners, placing contaminated waters and sediment into CDFs, only to redischarge these materials to the ecosystem having put in place that helps to promote the worst congeners. We have allowed those waters to pass back into the Great Lakes untreated. In fairness to Corps of Engineers and other agencies that participated in the design of these structures, no one had much good information 10-15 years ago on the behavior of the more toxic congeners to be able to predict that this might occur. However, it is happening. That means that any further containment structures built for these materials should be built in upland habitats, well away from aquatic areas. These should be treated as toxic chemical landfills.

To facilitate forward movement in this area, I believe strongly that some combination of the public and private sector should seek new ways of dredging and new dredging technologies so that we do not face this problem in the future. It has always seemed to me utterly foolish that we pick up contaminated sediments in the incredibly dilute form of a few parts per million of contaminants, place them in a containment structure still in a dilute form after resuspending the toxic materials in water, and believe then that we have contained the material. What we need to do is to treat contaminated sediments as a mining problem. No mining company would ever mine a mineral resource without concentrating it first to the maximum extent possible. That is what is needed in this situation. That is, we need to apply mining technologies to recover the contaminants, such as PCBs and dioxin, in a concentrated form so that we can discharge and reuse formerly contaminated sediments as cleaned sediments and retain the very small fraction (somewhere between 1-5% of the total of contaminanted sediments) as a highly toxic waste product. If we approach the problem this way, we will be in a far better position to deal with it economically than if we continue to approach dredging as a bulk disposal problem. Fortunately, there are technologies in the mining industry that will allow us to recover this contaminant material, but it has been my experience in attending sediment conferences that the agencies involved are "reinventing the wheel" by just now discovering that some of these mining technologies exist, in spite of the fact that the technologies have been in use in the private mining sector over the last 5 decades. A prime example has been the EPA's discovery of the "hydrocyclone" to sort sediments by size fractions. Among the many hats that I wear (e.g. President, Ecological Research Services, Inc., President of Michigan Audubon Society, Consultant on waste reclamation and waste handling to the mining and electric power industries), mining waste consultant is prominent on the list. I believe that private industry can solve this dilemma rather quickly if given even modest incentives.

With respect to sources of these materials, responsibility for their presence, and obtaining funding for control of these contaminant materials, I believe strongly that we need to be looking at the wildlife damage assessment rules that are now in place under CERCLA. You ought not to increase appropriations to the federal government agencies of public funds, but recover damages from those corporations, municipalities, and others that discharged these materials. The joint and severeable liability provisions of CERCLA, and most particularly the newly adopted wildlife damage assessment rules, provide an excellent means to assess for damages done to wildlife in the past. Were I in your place, I would be particularly encouraging to the government agencies of all levels to make use of those rules against those known source corporations, municipalities, and others that have failed to see a need in the past to address these contamination problems. I would be especially vigorous in pursuit of those entities that basically operated in the mode of hoping that the problems they left would go away given enough time. The physical and biological mechanisms at work will not permit this problem to go away without our active intervention. The act of intervention will be expensive - certainly in the hundreds of millions of dollars around the Great Lakes basin. I believe strongly that using the wildlife damage assessment rules and having this committee stimulate the U.S. Fish and Wildlife Service, the state DNRs, and other governmental organizations to make such assessments and use the rules to place the liability back on the original dischargers - which is exactly where it belongs - is the appropriate way to go.

I do not see this committee recommending massive increases in EPA budgets, Fish and Wildlife Service budgets, or other activities. Rather, I see that it is long overdue that the private sector and those components of the public sector that discharged these materials in the past be called to account for their follies.

Testimony given before this subcommittee last year by Dr. Wayland Swain and Mr. Timothy Kubiak identified the seriousness of these problems for both the human and wildlife populations ~~of~~ the Great Lakes basin. I cannot urge you strongly enough to address these questions now. The lag time to see these effects appearing in the human population is on the order of decades. Wildlife species offer us a way to assess these problems much quicker because we can look at 2-3 year generation times in many wildlife species, rather than 15-20 years for humans. By the time we recognize the human problem from contaminants in a meaningful way, the damage will have become massive to our species.

On behalf of Cosmos, the deformed cormorant, - who could not be here today - and all other damaged or deformed wildlife, I thank you for your attention. I would be pleased to try and answer questions about my research work done in the last few years, and to provide you with any detailed information that I may have on actual impacts to wildlife. Thank you.

TESTIMONY OF JANE ELDER

MIDWEST REPRESENTATIVE OF THE SIERRA CLUB
BEFORE THE SENATE SUBCOMMITTEE
ON OVERSIGHT OF GOVERNMENT MANAGEMENT
MAY 23, 1989

Senator Kohl, I sincerely appreciate this opportunity to speak before the Committee on Great Lakes issues. Your leadership, and the initiative of the committee on this issue is an important step in attaining better accountability of federal activities associated with Great Lakes environmental restoration and protection.

The committee has asked the witnesses to address specific concerns, and I will be happy to speak to those points as well as raise additional concerns.

Lake Michigan today remains one of the most seriously polluted Great Lakes. While the alewives no longer choke the summer beaches, the fish in Lake Michigan contain some of the highest contaminant levels in the Great Lakes: most salmon and lake trout are essentially off limits to women of childbearing years and children. The fish-eating birds of the Green Bay ecosystem show the highest levels of birth defects and egg failures in the Great Lakes region. Ten of Lake Michigan's harbors and bays are underwater hazardous waste hot-spots, one of which, a Superfund site since 1983 has still not seen a shovelful of PCB-laden sediment removed from the harbor.

While the Clean Water Act promised us goals of fishable and swimable waters, someone left out the word "edible" when it came to our fish. Moreover, just because there are fish in the lake, doesn't mean they would remain there if stocking programs ceased. The native lake trout, once a mainstay of the Lake Michigan commercial fishery, no longer successfully reproduces in Lake Michigan. While part of its demise can be blamed on the sea lamprey, the lamprey cannot be held accountable for the affect of contaminants on reproductive failure. Recent research conducted by the Fish and Wildlife Service shows a direct correlation between specific PCB compounds and the failure of lake trout eggs. While some native species have maintained viable populations, the loss of the top native predator species is a clear indication of something gone awry in the ecosystem.

Thus, a wild and natural Lake Michigan is a thing of the past. Below its shining surface today's lake is an artificial aquarium stocked with exotic species and natives born in the controlled habitat of a fish hatchery, and the millions we spend on producing fish for Lake Michigan result in a mature product unfit for human consumption.

Meanwhile, as though there was no correlation between the pollution entering the lake and the contaminants we find in the fish, our state agencies, under the jurisdiction of the Clean Water Act and Clean Air Act continue to permit, and I use that term in its sense as an active verb, the toxic pollution of the lakes through discharges of toxic pollutants into the lakes and into our atmosphere. Lake Michigan is the one lake where we can't attempt to share the blame for present conditions with Canada. Lake Michigan is a living example of the result of 20 years of U.S. environmental policy in action.

First, we need to take some credit. Through billions of dollars of expenditures for sewage treatment we have made significant gains in reducing nutrient and bacteria pollution in Lake Michigan. Nutrients, such as phosphates and nitrates accelerate aging in a lake and lower the amount of oxygen in the water. Green Bay is a good example of accelerated aging in an aquatic system, as was Lake Erie during the period it was considered dead. But in spite of the billions, and in spite of the visible progress in water quality, there are still incidents of raw sewage being dumped in the lakes in combined sewer overflows or as the result of failed or antiquated sewage treatment systems. Moreover, most of these plants were never designed to treat the complex soup of toxic chemicals which ends up in the municipal waste stream.

While there is still significant progress to be made in controlling these conventional pollutants, the toxic pollutants are the area of greatest remaining challenge.

Under the Great Lakes Water Quality Agreement of 1978 and 1987, the U.S. and Canada have pledged that "the discharge of toxic substances in toxic amounts be prohibited and the discharge of any or all persistent toxic substances be virtually eliminated." This brief statement is at the heart of the Agreement, and yet daily, toxic substances reach the lakes through direct discharge, surface water runoff, groundwater infiltration, atmospheric washout and fallout, and disturbance of contaminated sediments.

The new annexes to the agreement were intended to focus on many of these specific problems. In 1987 I was privileged to participate as a citizen observer in the negotiations between the United States and Canada for the new annexes to the Water Quality Agreement. The careful review by both governments produced a very complete document, and yet, more than a year after the signing ceremony, little new action has taken place.

Embarrassingly, the United States has missed several deadlines specifically called for in the Agreement. As the agency designated under Section 118 of the Clean Water Act to "seek to attain the goals embodied in the Great Lakes Water Quality Agreement of 1978 with particular emphasis on toxic pollutants", we must look to the EPA to find answers to the missed deadlines.

We needn't look far to find answers. We find an agency dispirited by eight years of an administration hostile to environmental protection, where the Office of Management and Budget has driven many of the policy decisions while programs and divisions scramble and compete for the same precious dollars for research, enforcement and staffing. We find an agency who's Washington leadership has failed to support increased staffing and services in the Great Lakes National Program Office and has failed to take any leadership in integrating EPA's implementation programs with the goals in the Water Quality Agreement. This year the administration requested $2 million less than last year for EPA Great Lakes programs.

Everyone knows that money alone isn't the complete answer. Political will and money will go a lot farther, but rebuilding the strength and spirit of this agency will take time and leadership. Thus, it comes as no surprise that the Great Lakes National Program Office has fallen short of the large list of expectations and obligations under the 1987 annexes. When time and talent is spent fighting for budgets, arguing with the OMB and wrestling cooperation from headquarters, it is not being spent on cleaning up the Great Lakes. However, domestic budget battles are an insufficient excuse for failing to meet the goals of an international agreement, and we need to move forward in Congress and the agencies to resolve the domestic problems which prevent us from meeting those goals.

First the EPA must, as an agency, commit the political will and resources at headquarters, at the Great Lakes National Program Office and the three affected Regional offices to meet the goals of the agreement. This means assigning specific responsibilities and the authority to carry out those responsibilities to the Program Office and the affected Regional Administrators and Office

Administrators. If air and water quality, or hazardous waste management policies are in conflict with the goals of the Agreement, this means modifying those policies at the highest level, in addition to translating these policies at the state water quality program level and the individual permit level.

Secondly, Congress must authorize and appropriate sufficient funds to carry out the many new obligations of the 1987 Agreement as well as old obligations under the 1978 Agreement. The current appropriations for the Program Office, which include a base operating budget, as well as the sediments clean-up and toxics monitoring and surveillance program called for under the Clean Water Act, are insufficient to cover the additional obligations which among other things include:

"...establishment of pre-treatment requirements for all industrial plants discharging waste into publicly owned treatment works...by the end of 1982;

...requirements for the substantial elimination of discharges into the Great Lakes system of persistent toxic substances...by the end of 1983;

...development of implementation of Remedial Action Plans for Areas of Concern;

...development and implementation of Lakewide Management Plans for open lake waters;

...identification of point source impact zones by September 30, 1989;

...monitoring capable of determining total pollutant loadings to, storage and transformation within, and export from the Great Lakes System;

...contributions of various exposure media to the overall human intake of toxic substances in the Great Lakes Basin Ecosystem;

...further development and use of reproductive, physiological and biochemical measures in wildlife, fish and humans as health effects indicators and the establishment of a data base for storage, retrieval and interpretation of the data;

...develop and implement watershed management plans...to reduce non-point pollution;

...develop a standard approach and agreed upon procedures for the management of contaminated sediments by December 31, 1988;

...and shall conduct research, surveillance and monitoring and implement pollution control measures for the purpose of reducing atmospheric deposition of the toxic substances, particularly persistent toxic substances, to the Great Lakes Basin Ecosystem."

This is a most incomplete sampling of obligations, but I can tell you that we cannot expect the Program Office to do all this work with $13 million and without the specific authority to reject permits and programs which fail to meet the goals of the Water Quality Agreement.

It is naive to assume that EPA will simply request additional millions to carry out these obligations when worthy existing programs are strapped for funds. Even if EPA wanted to seek additional funds, the heavy hand of OMB would most likely prevent them from doing so. Congress needs to take the lead on this issue: establishing authority, providing appropriations, and following up with strict oversight.

I would also like to take this opportunity to address one of the most serious pollution problems facing the Great Lakes: toxic air pollution.

Even if we were to successfully clean up all other sources of pollution to Lake Michigan we would only be solving half of the problem. The International Joint Commission Science Advisory Board tells us that up to 50% of the toxic pollution in the Lake Michigan/Huron ecosystem is coming from the sky. What goes up, comes down in fallout and washout in rain and snow. PCBs, lead, mercury, DDT, dioxins, and furans are among the most infamous in the mix of toxic rain, but there are likely to be hundreds of other chemicals. The IJC estimates that 1000 toxic chemicals have been found in the Great Lakes.

In the U.S. the EPA regulates only seven toxic air pollutants under Section 112 of the Clean Air Act. Thus, the atmosphere has become the last legal dump for compounds we strictly regulate in water systems and landfills.

The Congress and the Administration have at last realized that the current program is insufficient to protect human health. The Senate is considering S. 816, legislation which will address toxic air pollution in a much broader and comprehensive fashion than Section 112. However, it still falls short of adequately protecting human health and the environment.

The bill's sponsors deserve credit for recognizing a need to shift from a rigid risks-based program to a broad technology-based program for a swift cleanup strategy. However, definitions of best available technology in the legislation may allow less than the best to be put in place. Chemicals that threaten our lungs and our food and water supplies with potentially devastating effects must be dealt with in the most stringent fashion and with the most effective control technologies available.

Carcinogens, the cancer-causing chemicals, should be ratcheted down to zero emissions. Both the Monsanto Corporation and Union Carbide have pledged to do this. Other industries should be required to meet this challenge. Residual risk to the exposed public should not exceed one cancer in a population of one million per year. The current legislation would allow one cancer per ten thousand per year. That is roughly the risk level associated with living and breathing the air in Southeast Chicago--one of the most heavily polluted areas in the United States. Clearly this is an unacceptable risk level as a standard for America.

Not all toxic chemicals cause cancer. As we are learning from Great Lakes fish and wildlife some cause birth defects, suppress fertility, cause neurological damage or a host of other effects. EPA must continue to identify these particularly hazardous chemicals and the same zero discharge strategy needs to be applied to them. A good list to start with is the IJC Critical Pollutant List.

A closer look reveals many chemicals which are no longer used in the United States, but are still major contributors to lake pollution. Where are they coming from? PCBs are ubiquitous in the environment--languishing in old landfills and the bottoms of many Lake Michigan harbors as well as from leaking from storage sites. Waukegan Harbor's contaminated sediments may be the largest known point source of airborne PCBs. Atmospheric scientists have suggested that a significant portion of the PCBs found in Lake

Superior are actually coming from Lake Michigan evaporation. Thus a comprehensive cleanup must go beyond familiar industrial or mobile emission sources.

New DDT has been found in the Great Lakes in recent years. We know it is new because DDT eventually breaks down into DDE. Our domestic contaminant load should be well-advanced in this breakdown process. Where then is the new DDT coming from? Probably Mexico and Central America or even India or Asia where DDT is still actively used.

In summary, a good clean air strategy for the Great Lakes will include a Best Available Control Technology program, a goal of zero discharge for particularly hazardous chemicals, minimal public cancer risk from resididual chemicals as well as a recognition that both human lungs and the environment at large require protection from these pollutants.

In addition, any successful strategy for long-term cleanup of the Great Lakes must also include an International Agreement to control toxic substances which are easily airborne and distributed throughout the global atmosphere. Thus, the Lake Michigan and the Great Lakes solutions will require international, federal, state and local effort, but Congress has the opportunity to drive this effort and we urge you and your Great Lakes colleauges in Congress to do so.

JOHN O. NORQUIST
MAYOR

OFFICE OF THE MAYOR
MILWAUKEE, WISCONSIN

Mayor John O. Norquist
Milwaukee, Wisconsin
Testimony at U.S. Senate Subcommittee on Oversight of Government Management
May 23, 1989

re: EPA actions to implement the Great Lakes Water Quality Agreement of 1978 and restore water quality in the Great Lakes

Now is the time to raise the alarm about the continued destruction of the valuable and irreplaceable natural resources we have in the Great Lakes. The lives of millions of people in North America depend on the viability of the lakes.

This is not only a local issue; it is an international issue of immense proportions. The threat to this environmental and economic resource grows daily. The Great Lakes will not do anyone any good if they are full of poison.

I. Milwaukee Harbor Water Quality and Its Impacts

1. Moderate to severe levels of pollution in the water column and bottom sediments have been found in the Milwaukee Harbor Estuary. These water resources problems include: low dissolved oxygen; high fecal coliform levels; high phosphorous levels; high levels of toxic substances and excessive algae growth.

2. These water resources problems result in poor aesthetic quality of the estuary, limited fish quantities, poor quality of ecological habitat and high toxic substances in fish tissues.

3. These conditions, combined with occasional fish kills, severely detract from the community's full enjoyment of this important water resources. They inhibit economic and recreational development in the area by perpetuating negative public perception of the waterways.

4. Beach closings, restrictions on fish and wildlife consumption, tainting of fish and wildlife flavor, loss of habitat, eutrophication and the existence of undesirable algae are some of the major "beneficial use impairments" in the Milwaukee Harbor. There are many people who fish in the harbor and the Milwaukee River despite warnings against consumption of the fish. But these people are living off the fish. I propose the EPA conduct studies of the effect on the health of these people of eating the fish.

5. Combined sewer overflows, point and non-source pollution, including urban and upstream rural sources, are significant contributors to these pollution problems. Wisconsin was one of the first and remains one of the few states with a workable, non-point source pollution program. I suggest the EPA, as directed under the Clean Water Act, ensure that programs such as these receive federal assistance.

6. In Milwaukee, we have adopted an erosion control ordinance for the three local river watersheds and are completing construction of a deep tunnel sewer collection system to solve problems of sewer flooding and backup.

II. Background and status of Milwaukee Remedial Action Plan

1. As a requirement of the Great Lakes Water Quality Agreement between the U.S. and Canada, a Remedial Action Plan (RAP) is to be developed for each of the 42 Areas of Concern (AOC) to control water pollution on the Great Lakes Basin. These AOCs were identified by the International Joint Commission.

2. The Milwaukee Harbor Estuary is one of four such AOCs in Wisconsin. (see attached). The EPA has delegated this responsibility for establishing a RAP for the Milwaukee Harbor Estuary to the state Department of Natural Resources (DNR). In September 1988, the DNR drafted a scope of study for the Milwaukee RAP using an EPA grant.

3. The Milwaukee RAP will provide Wisconsin's strategy for restoring the beneficial uses of the Milwaukee River ecosystem. It will address toxins in detail, something that previous water

quality planning studies in the area have not done; previous studies were focused on conventional pollutants.

4. The DNR, in conjunction with other government agencies and community environmental groups, has held public hearings and public information meetings to drum up support for this study. However, as far as we know, no Citizen Advisory Committee was ever established and no formal meeting of a Citizen Advisory Committee has been held. A Technical Advisory Committee on Toxins is being established; its first meeting is scheduled for June 7 in Milwaukee.

5. We understand the DNR is waiting to have a new planner on board before writing a final draft of the RAP. Until then, RAP activities for the Milwaukee harbor appear to be going slowly or not at all at this time.

III. Major Needs Associated with the Milwaukee RAP

1. There is an urgent need for the EPA to prod the DNR into action. We cannot stall any longer. The DNR must start the Milwaukee RAP as soon as possible. Interested local government and citizens are waiting to participate in this important process.

2. The EPA must determine sediment quality standards in the Milwaukee Harbor Estuary for a large number of toxic pollutants such as pesticides, metals and other organics.

3. A new estimate must be made of the impact of the Milwaukee Deep Tunnel construction program in improving the water quality of the Milwaukee Harbor Estuary and Lake Michigan. The City of Milwaukee and the Metropolitan Milwaukee Sewerage District are being questioned about the effectiveness of this expensive undertaking in improving water quality in the area. Yet this is an EPA-mandated program.

4. There is a need for a better estimate of the amount of toxins in the receiving water, e.g., Lake Michigan, that is contributed by precipitation and solids deposition.

5. There must be uniform water quality rules in the Great Lakes states.

6. We must control pollution at the source to lessen the load on the environment.

IV. Great Lakes Research Center

1. The Clean Water Act, Section 118 in the 1987 amendments, Subsection D, authorized $3 million per year through the EPA General Authorization for Great Lakes Programs to the National Oceanic Atmospheric Administration to establish a Great Lakes Research Center, which would serve as the only national, computerized data bank for Great Lakes research. The center would serve as a much-needed clearinghouse for research and inventory of work related to the preservation and protection of the Great Lakes natural resources. There is now no such facility.

2. Unfortunately, Congress has never appropriated the funds to establish this facility because of a disagreement on a location of the office between competing Michigan and Wisconsin congressional delegations.

3. I urge the congressional delegations to come to a positive resolution of this stalemate. Milwaukee would be happy to host the facility, or share some portion of the work with other facilities. We must reach a compromise and move forward.

V. Call for action

1. I urge you to take the message back to Washington that EPA must make Great Lakes pollution cleanup and resource management a top priority.

2. EPA must make it clear to the Wisconsin DNR that the agency must immediately develop a plan of action to address the cleanup of the Milwaukee Harbor Estuary, and should continue to involve other government entities and interested citizens willing to share their expertise.

3. Great Lakes pollution is a detriment to economic opportunities and the quality of life. We must attack this serious threat to the future of the Great Lakes.

JOHN GLENN, OHIO, CHAIRMAN

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United States Senate
COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

May 5, 1989

Mr. William K. Reilly, Administrator
Environmental Protection Agency
401 M Street, S.W.
A101 West Tower 227
Washington, D.C. 20460

Dear Mr. Reilly:

On April 28, 1989, the Senate Subcommittee on Oversight of Government Management held a hearing in Grand Rapids, Michigan, on actions taken by EPA to implement the Great Lakes Water Quality Agreement of 1978 to restore water quality in the Great Lakes. Mr. Valdus Adamkus and Ms. Carol Finch testified on behalf of EPA.

To follow up on topics of concern raised at the hearing, the Subcommittee requests that EPA provide the following information by May 30, 1989:

(1) At the hearing, EPA indicated that a draft Lakewide Management Plan for Lake Michigan would be ready for public distribution by July 1990. What is a reasonable deadline for a final Plan? Does EPA plan to make both dates formal administrative deadlines?

(2) At the hearing, the Lake Michigan Federation recommended that EPA appoint a citizens advisory committee to help draft the Lakewide Management Plan for Lake Michigan. Does EPA plan to appoint such a committee? If so, when will these appointments be made?

(3) For each Remedial Action Plan (RAP) to cleanup a Great Lakes toxic hotspot in the United States, please provide a deadline for: (a) submission of the draft RAP to the International Joint

Commission for review; and (b) inclusion of the final RAP in a state water quality plan. Does EPA plan to make these dates formal administrative deadlines?

(4) At the hearing, confusion arose over whether EPA will ensure Illinois' development of a RAP for Waukegon Harbor. Will EPA require development of this RAP? If not, why not?

(5) At the hearing, the Great Lakes Natural Resource Center indicated that draft regulations issued by EPA under Section 304(l) of the Clean Water Act do not mention either the designated Great Lakes toxic hotspots or the RAPs required by the Great Lakes Water Quality Agreement. Does EPA plan to revise the draft regulations to take into account these Great Lakes developments? If not, why not?

(6) At the hearing, EPA announced that it was seriously considering a major new initiative to develop model water quality rules, in conformance with the Great Lakes Water Quality Agreement, for use throughout the Great Lakes basin. Assuming EPA proceeds with this initiative, what is a reasonable date for: (a) completion of a first draft for public distribution; and (b) inclusion of a final set of rules in EPA's national directory of water quality criteria? Would EPA make these dates formal administrative deadlines?

(7) At the hearing, EPA indicated that it intends to build five master air toxic monitoring stations, one for each of the Great Lakes. When will the United States and Canada finalize the location of these stations? Does EPA plan to set formal administrative deadlines?

(8) In a memorandum dated April 25, 1989, EPA states that a Work Plan detailing ARCS activities from FY89 to FY92 is being readied for public distribution. An attached draft Work Plan indicates that, at the five sites slated for ARCS demonstration projects, field sampling of sediments

will begin this summer; benchscale laboratory tests of cleanup technologies will begin in the third quarter of 1989; and the actual demonstrations will be underway by the first quarter of 1991. Will EPA supply a copy of the final ARCS Work Plan as soon as it is available? When will that be?

(9) Has work resumed on developing a model stormwater permit for the Rouge River? Please provide a copy of the revised work order EPA has sent to the contractor assigned to this task.

Thank you for your assistance in this important matter. We appreciate the cooperation shown to date by Mr. Adamkus and Ms. Finch, who have been forthcoming and responsive to the Subcommittee's concerns. Please have your staff contact Elise Bean or Pam Lokken of the Subcommittee staff at (202) 224-3682 with any questions about this letter.

Sincerely,

Carl Levin

Carl Levin, Chairman
Subcommittee on Oversight of Government Management

CL:ejb

cc: Valdus V. Adamkus
Carol Finch

United States
Environmental Protection
Agency

External Affairs (A-100AE)
Washington DC 20460

EPA

Legislative Analysis

89 JUN 30 AM 9:12

June 29, 1989

Honorable Carl M. Levin
Subcommittee on Oversight and Government Management
Committee on Governmental Affairs
United States Senate
Washington, D.C. 20510-6250

Dear Mr. Chairman:

Enclosed are the responses to the questions regarding the Environmental Protection Agency's Great Lakes Program which you addressed to the Administrator. These questions arose from the April 28th hearing held in Grand Rapids, Michigan.

I hope this information will be helpful to you and the members of the subcommittee. If there is any further information we may furnish you please do not hesitate to contact me.

Sincerely,

Barbara Bassuener

for A. Henry Schilling
Director, Office of
Legislative Analysis

Enclosure

Question 1
At the hearing, EPA indicated that a draft Lakewide Management Plan for Lake Michigan would be ready for public distribution by July 1990. What is a reasonable deadline for a final Plan? Does EPA plan to make both dates formal administrative deadlines?

Answer to Question 1
The Lakewide Management Plan development process is a joint effort on the part of U.S. and Canadian, Federal, State and provincial agencies, as well as the private sector. This effort was the focus of attention of the U.S./Canadian workshop on Lakewide Management Plans, held on April 26-27, 1989, in Chicago.

A revised draft of the existing Lake Michigan Toxics Control/Reduction Strategy will be completed by July 1990. Once accord has been reached on what, if any, additional elements should be included in a Lakewide Management Plan, and adequate public input has been corporated, we will issue the final plan for Lake Michigan.

Question 2
At the hearing, the Lake Michigan Federation recommended that EPA appoint a citizens advisory committee to help draft the Lakewide Management Plan for Lake Michigan. Does EPA plan to appoint such a committee? If so, when will these appointments be made?

Answer to Question 2
Annex 2 of the Great Lakes Water Quality Agreement calls upon the Federal governments to work with the States to ensure public involvement in all phases of Lakewide Management Plan development. We are currently discussing with public groups (including Lakewide Management Federation) the appropriate means for public level of involvement for each stage of Lakewide Management Plans.

Question 3
For each Remedial Action Plan (RAP) to cleanup a Great Lakes toxic hotspot in the United States, please provide a deadline for: (a) submission of the draft RAP to the International Joint Commission for review; and (B) inclusion of the final RAP in a state water quality plan. Does EPA plan to make these dates formal administrative deadlines?

Answer to Question 3
In 1985, the States made a commitment to the International Joint Commission, through the Water Quality Board, to prepare Remedial Action Plans (RAPs) for the Great Lakes Areas of Concern. This commitment was reflected in the 1987 revision to the Great Lakes Water Quality Agreement. Neither the Agreement nor the Clean Water Act sets deadlines for preparation of those plans. In fact, the RAP process is defined as an interactive process reflecting the current levels of knowledge of environmental problems, and the existing and anticipated remedies.

Inasmuch as the Section 106 water quality planning and funding process provides a framework for the States to carry out Remedial Action Plan development as a part of their overall water quality program, the Agency will insist upon commitments and follow-through performance by the States. Any enforceable deadlines for Remedial Action Plans, whether administrative or statutory, must be accompanied by funding earmarked for that activity. The Section 106 process does not provide such funding at this time, and funding of other Section 106 activities cannot reasonably be withheld if a State fails to develop Remedial Action Plans or to carry out other Great Lakes Water Quality Agreement activities not funded under Section 106 provisions.

It would be reasonable to set deadlines for the States to complete Remedial Actions Plans if the Agency could provide funding for plan development. The target dates set for themselves by the States have been moving targets largely because of budget cutbacks and uncertainties at both the State and Federal levels, and because the process (and the requirements under the process) have changed with time. Given defined levels of funding, the States could be held to their target dates, or new and specific deadlines could be set, based upon the levels of funding provided. A current State schedule for completing RAPs is attached. Until and unless such specific RAP funding is provided, the Agency must rely on State self-imposed targets.

Question 4
At the hearing, confusion arose over whether EPA will ensure Illinois' development of a RAP for Waukegan Harbor. Will EPA require development of this RAP? If not, why not?

Answer to Question 4
USEPA has consistently taken the position that Illinois is obligated to develop a Remedial Action Plan (RAP) for the Waukegan Harbor Area of Concern in order to satisfy its commitment to the Great Lakes Water Quality Board and the Great Lakes Water Quality Agreement (GLWQA), as revised in 1987. Confusion may have arisen due to the fact that a separate Superfund RAP has been developed under the terms of the Outboard Marine Corporation (OMC) Site Consent Decree.

The OMC RAP is ancillary to the GLWQA RAP to be developed by Illinois Environmental Protection Agency (IEPA) in accordance with the Great Lakes Water Quality Agreement. The distinction between these two RAPs was clearly expressed in the Responsiveness Summary for the Record of Decision for the OMC Site, to which both the USEPA and the State of Illinois were party. A copy of the relevant pages of that document are enclosed (A).

Question 5
At the hearing, the Great Lakes Natural Resource Center indicated that draft regulations issued by EPA under Section 304 (l) of the Clean Water Act do not mention either the designated Great Lakes toxic hotspots or the RAPs required by the Great Lakes Water Quality Agreement. Does EPA plan to revise the draft regulations to take into account these Great Lakes developments? If not, why not?

Answer to Question 5
The Section 304(l) regulation does not mention either the designated Great Lakes toxic hotspots or the RAPs required by the Great Lakes Water Quality Agreement (GLWQA). EPA did not include mention of the GLWQA toxic hotspots or RAPs in the national regulation since it is inappropriate to list all such site specific agreements, plans or waters in national regulations. Instead EPA will require States to evaluate all existing and readily available water quality-related data and information. The preamble that will accompany the regulations when they are published in the Federal Register mentions reports of adverse water quality conditions by the International Joint Commission and the Great Lakes Water Quality Board as examples of information sources that must be evaluated under this provision. Where AOCs meet the 304(l) criteria, the States do list them; even where the AOCs do not appear on the 304(l) short list, they will be addressed pursuant to the GLWQA.

One commenter on the proposed regulation had requested that the definition of "applicable standard" for the purposes of listing include the water quality objectives established under the Great Lakes Water Quality Agreement of 1978. EPA did not incorporate this comment into the final rule. Section 304 (l)(1)(B), which requires the "short" list of waters, refers to the applicable standard under Section 303 of the Clean Water Act (CWA). Section 303 establishes the process for State adoption of water quality standards, and EPA adoption when necessary. Provisions of the GLWQA are not standards "under section 303" of the CWA, and were therefore not included.

Question 6
At the hearing, EPA announced that it was seriously considering a major new initiative to develop model water quality rules, in conformance with the Great Lakes Water Quality Agreement, for use throughout the Great Lakes basin. Assuming EPA proceeds with this initiative, what is a reasonable date for: (a) completion of a first draft for public distribution; and (b) inclusion of a final set of rules in EPA's national directory of water quality criteria? Would EPA make these dates formal administrative deadlines?

Answer to Question 6
This initiative is intended to address several Clean Water Act related issues, including development of aquatic life criteria, human health criteria, antidegradation guidance, and guidance for implementing the criteria in a permitting context. We may target those areas of least controversy first. Under this approach, it is conceivable that elements of the initiative could be completed in one year. Other elements would be completed over a longer period of time, perhaps as long as three years. Dates for completion of each element would be agreed to by each of the States. It is intended that the guidance be in place in time to affect the review of State standards revisions due in February 1993. Please note that this initiative is in its infancy. The plan has not yet been presented to the States, much less endorsed by them. We have, to date, received their support for the concept and their acknowledgement of the need for the effort. However, we are only now preparing a detailed work plan under which the target dates you need will be established. The dates presented above must be viewed in that context.

Question 7
At the hearing, EPA indicated that it intends to build five master air toxic monitoring stations, one for each of the Great Lakes. When will the United States and Canada finalize the location of these stations? Does EPA plan to set formal administrative deadlines?

Answer to Question 7
The proposed U.S./Canadian cooperative sampling network would consist of two distinct types of atmospheric deposition sampling sites: master (research) sites and routine sites. This network would include five master sites (2 U.S., 2 Canadian and 1 joint), one on each of the Great Lakes, and twenty routine sites (12 U.S. and 8 Canadian), four on each of the Great Lakes.

Since March 1987, the EPA has established a master site and 2 routine sites on Green Bay. The Environment Canada is presently operating a master site at Point Petre on the shore of north eastern Lake Ontario.

Finalization of the planned cooperative network and the likely remaining stations is expected by December 1989. The EPA will set formal administrative deadlines regarding the scheduling of the site establishment once formal agreement is reached with the Canadians.

Question 8
In a memorandum dated April 25, 1989, EPA states that a Work Plan detailing ARCS activities from FY89 to FY92 is being readied for public distribution. An attached, draft Work Plan indicates that, at the five sites slated for ARCS demonstration projects, field sampling of sediments will begin this summer; benchscale laboratory tests of cleanup technologies will begin in the third quarter of 1989; and the actual demonstrations will be underway by the first quarter of 1991. Will EPA supply a copy of the final ARCS Work Plan as soon as it is available? When will that be?

Answer to Question 8
The Assessment and Remediation of Contaminated Sediment (ARCS) Program Work Plan has just completed initial review. A final Work Plan for FY89/90 should be available by late July, and can be provided to the Subcommittee at that time.

Question 9
Has work resumed on developing a model stormwater permit for the Rouge River? Please provide a copy of the revised work order EPA has sent to the contractor assigned to this task.

Answer to Question 9
The GLNPO mission contractor has resumed work on development of a model stormwater permit for the Rouge River. The first three deliverables have already been received, and the project is now scheduled for completion by October 1, 1989. A copy of the revised work assignment is enclosed.

GREAT LAKES AREA OF CONCERN REMEDIAL ACTION PLANS

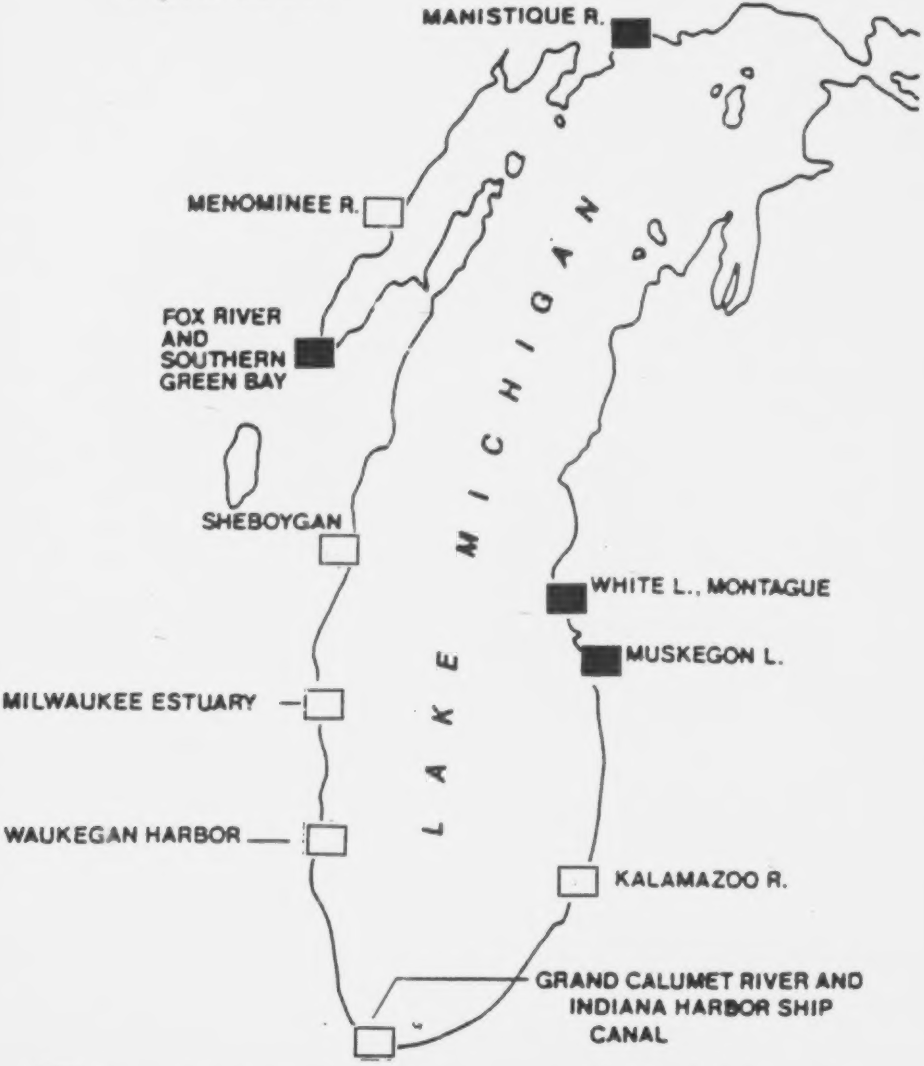
STATE	ACTUAL/(ANTICIPATED) SUBMISSION DATE
OHIO	
Ashtabula R.	(8/89)
Black R.	(1/90)
Maumee	(1989)
INDIANA	
Indiana Hbr/Grand Calumet	(8/89)
ILLINOIS	
Waukegan Harbor	(*)
MINNESOTA/WISCONSIN	
St. Louis Bay	(6/90)
WISCONSIN	
Fox R./S. Green Bay	10/87
Sheboygan Harbor	(12/89)
Milwaukee Estuary	(3/91)
WISCONSIN/MICHIGAN	
Marinette/Menominee	(12/89)
MICHIGAN	
Muskegon L.	10/87
Manistique R.	10/87
White L.	10/87
Deer L./Carp R.	10/87
Clinton R.	11/88
Kalamazoo R.	(*)
River Raisin	10/87
Rouge R.	8/88
Torch L.	10/87
Saginaw R./Bay	11/88
St. Marys R.	(3/90)
St. Clair R.	(3/90)
Detroit R.	6/87
NEW YORK	
Buffalo R.	(9/89)
Eighteen Mile Creek	(6/93)
Rochester Embayment	(12/90)
Oswego R.	(6/90)
St. Lawrence R.	(1/91)
Niagara R.	(8/91)

* development postponed by CERCLA litigation (settled 4/89 for Waukegan)

dylux 577 precedes

Areas of Concern in Lake Michigan

April 1989


MANISTIQUE R.
MENOMINEE R.
FOX RIVER AND SOUTHERN GREEN BAY
SHEBOYGAN
MILWAUKEE ESTUARY
WAUKEGAN HARBOR
LAKE MICHIGAN
WHITE L., MONTAGUE
MUSKEGON L.
KALAMAZOO R.
GRAND CALUMET RIVER AND INDIANA HARBOR SHIP CANAL

■ Remedial Action Plan has been submitted to IJC for review.

☐ Remedial Action Plan not yet submitted to IJC for review.

LAKE MICHIGAN REMEDIAL ACTION PLANS

Lake Michigan Areas of Concern	In 1985, Projected RAP Submission Date*	In 1987, Projected RAP Submission Date**	Current Status of RAP***
1. Grand Calumet River/ Indiana Harbor Canal (Superfund Site)	June 1985	Jan. 1988	Missed both deadlines. New date: Aug. 1989.
2. Waukegan Harbor (Superfund Site)	June 1985	Not Specified	No work on RAP; Court decree on cleanup filed Oct. 1988.
3. Sheboygan Harbor (Superfund Site)	Dec. 1986	Oct. 1988	Missed both deadlines. New date: Dec. 1989.
4. Milwaukee Estuary	June 1985	Oct. 1989	Will miss both deadlines. New date: March 1991.
5. Fox River/Southern Green Bay	June 1986	Dec. 1987	1987 deadline met.
6. Menominee River	June 1986	Oct. 1989	Will miss both deadlines. New date: Dec. 1989.
7. Kalamazoo River	June 1986	April 1988	Draft RAP on hold; litigation ongoing.
8. Manistique River	June 1986	Oct. 1987	1987 deadline met.
9. Muskegon Lake	June 1985	Oct. 1987	1987 deadline met.
10. White Lake	June 1985	Oct. 1987	1987 deadline met.

* Responsible state indicated it would sumbit RAP to International Joint Commission (IJC) by data shown; from 1985 report prepared by IJC.

** Responsible state indicated it would submit RAP to IJC by date shown; from 1987 report prepared by IJC.

*** Information compiled in April 1989 by Senate Subcommittee on Oversight of Government Management.

Lack of Uniform Numerical Limits* on Select Pollutant Discharges into Lake Michigan

April 1989

	Michigan	Illinois	Indiana	Wisconsin
PCBs	0.00002	No Numerical Limits	No Numerical Limits	0.00000015
Dioxin	0.000000014	No Numerical Limits	No Numerical Limits	0.00000000003
Mercury	0.0006	0.0005	No Numerical Limits	0.000079

* Effluent limits are presented in milligrams/liter. Individual states may specify additional parameters that affect these limits.

"No Numerical Limits" does not mean standards do not exist. In these instances limits are expressed in ways other than numbers.

This information was compiled by the Senate Subcommittee on Oversight of Government Management.